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DIGITAL SAT SUCCESS

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UNLOCKING SECRETS OF THE DIGITAL SAT:
A COMPREHENSIVE GUIDE

Digital SAT Success: Unlocking Secrets of the Digital SAT

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ABOUT ANANNT EDUCATION

Anannt Education is a company dedicated to helping students achieve their maximum potential on tests like the SAT, ACT, GRE, GMAT, IELTS, and TOEFL amongst others. In addition to its expertise in these exams, the company is also known for its AP preparation and university admissions counseling services. The company's university admissions counseling services are highly regarded, with students known for receiving a wide range of scholarships.

One of the key features of Anannt's approach is its use of technology to enhance the student experience. The company has developed a machine learning-based test-taking learning portal that provides students with a personalized practice platform. The platform is designed to improve the user experience and help students practice and improve their test scores.

The young team at Anannt is dedicated to caring for its students and helping them succeed. The team of passionate educators is committed to supporting students on their journey to reach their full potential and will go above and beyond to ensure their success. With a desire to excel and the guidance of Anannt, including its innovative learning portal, students can make test success a reality.

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FROM THE AUTHOR

The SAT is going digital for the first time in history, bringing a whole new set of challenges and questions that students must face. With the added complexity of a virtual environment, test-takers are understandably anxious about what this transition entails. To better prepare for the SAT in its digital format, there are certain strategies and tips that can help students avoid the common traps and mistakes that many test-takers make.

For test-takers, the new SAT is no biggie! Whether you're taking it on paper or on screen, it's all fresh territory—take it in stride and don't sweat it too much. The goal of this book is simple: to make your SAT prep a breeze and help you crush the exam with minimal effort. Trust us, if you use our strategies effectively, especially the error-logging technique and DESMOS magic, you'll be well on your way to SAT success.

For Parents and SAT tutors, change can be intimidating, but don't let the new digital SAT get you down. While it might seem different on the surface, it's still the same coachable standardized test at its core. So don't get too worked up about it.

This new digital SAT has some perks too. For starters, it's a shorter test, which means less time spent staring at a screen. Plus, you get a little extra time per question, which is always helpful when you're trying to nail down your accuracy. And the cherry on top? DESMOS. I mean, seriously, that thing is a lifesaver. I even dedicated a whole chapter to it in this book. So don't stress, this new SAT might be different, but it's also kind of awesome.

My team and I have put a lot of hard work into this book, and I'm really excited to share it with you. Whether you're a parent or student, this is your one-stop shop for all things related to SAT prep. Plus, since the digital SAT is still new and all, this is just the first version. Don't worry, though, we'll keep updating it with all the latest trends as they come out. So sit back, relax, and let us handle all your SAT stress. Happy studying!

Good luck! You've got this!

Labhesh Satish Lodha

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WELCOME TO THE DIGITAL SAT SCENE

WELCOME TO THE DIGITAL SAT SCENE

<u>OVERVIEW OF THE DIGITAL SAT FORMAT - A STEP INTO FUTURE</u>

Alright, before we dive into the nitty-gritty of preparing for the SAT, let's take a step back and get a handle on exactly what we're dealing with here. Understanding the test structure and syllabus is key to coming up with the best possible plan. So let's get to know the SAT a little better, shall we?

DIGITAL SAT STURCTURE

READING & WRITING	MATH
TWO STAGE ADAPTIVE TEST DESIGN: ADMINISTERED VIA 2 SEPRATELY TIME MODULES	TWO STAGE ADAPTIVE TEST DESIGN: ADMINISTERED VIA 2 SEPRATELY TIME MODULES
1ST MODULE : 25 OPERATIONAL QUESTIONS AND 2 PRETEST QUESTIONS	1ST MODULE : 20 OPERATIONAL QUESTIONS AND 2 PRETEST QUESTIONS
2ND MODULE: 25 OPERATIONAL QUESTIONS AND 2 PRETEST QUESTIONS	2ND MODULE: 20 OPERATIONAL QUESTIONS AND 2 PRETEST QUESTIONS
32 MINUTES EACH MODULE	35 MINUTES EACH MODULE
TOTAL QUESTIONS 54	TOTAL QUESTIONS 44
TIME ALLOTTED 64 MINUTES	TIME ALLOTTED 70 MINUTES

Okay, let's break it down. The first section of your SAT will be the Reading and Writing part. It's got 27 questions, and you'll have 32 minutes to tackle them. Now, here's the thing: only 25 of these questions will actually count towards your score. The other two are just 'pretest' questions that help the SAT people figure out how to make their test better. Here's the deal: you can't tell which two questions in the Reading and Writing section are the 'pretest' ones that don't count towards your score. So, the best thing to do is just focus on the whole test and give it your all. Don't try to get too hung up on those two questions, just do your best on every single one.

Okay, so once your 32 minutes are up on the first Reading and Writing section, you'll immediately move on to the second one. Just a heads up, there's no break in between these two sections. And here's the thing: the second Reading and Writing section will be an 'adapted' version of the first one. So, you need to be more alert while attempting this section.

To understand the adaptive nature of this section, you first need to know what it means. [Click here to understand adaptive testing.](#)

After your second module of Reading and Writing is over, you get a break of 10 mins. You are asked to leave your station. Utilize this time wisely. It is ideal to move your limbs, and have some water or a snack. You were staring at the screen for the last 64 mins. Try to relax your eyes. Avoid talking about the test to your peers. That will help you to stay focused and not get worried about which questions others have.

Now, after your break of 10 mins, you are ready for the next section of your Digital SAT test--the Math section.
This consists of a **total of 44 questions and 70 minutes** to answer them all! So, the next module shall comprise of **22 questions, including 2 "pre-test" (unscored)** questions, for which you get **35 minutes**. Similar to the Reading and Writing sections, there will be no break between Math modules.
And these modules shall also be adaptive as well. You can use calculators in your entire Math section.

[Click here](#) to get the list of all calculators allowed by the College Board.
https://satsuite.collegeboard.org/digital/what-to-bring-do/calculator-policy
You can also use the **graphing calculator** built directly into the testing application.
DESMOS!
Here is a detailed chapter on how to make the best use of DESMOS (in-built graphing calculator into digital SAT).
Ready to get a jump on the SAT? Let's start by taking a closer look at what kinds of questions it includes and what strategies you can use to ace it.

ADAPTIVE TESTING 101

So, the College Board is making the SAT shorter and giving you fewer questions to answer, but don't worry, they've got it covered. They're using this fancy schmancy adaptive testing thing to adjust the difficulty of the exam for each student and get a super accurate score. Basically, it's like the test is tailoring itself just for you. Neat, huh?

Adaptive testing is a method used by the SATs and many other tests alike to present questions that are most appropriate for you based on your ability level. This is done using the data collected from your responses in the earlier questions. The further into the test you go, the more accurate the system will become in determining your abilities *aka* your score.

Alright, so here's the deal with adaptive testing on the new SAT. Each section of the exam is going to be divided into two parts, or "modules." You'll start with the first module, which will have a mix of questions at different difficulty levels. Based on how you do on that first module, the second module will adjust to give you harder or easier questions. And your final score will be determined by how you perform on the second module.

If you knock it out of the park on that first module, you'll see tougher questions in the second one. And your final score for that section is going to be based on how you do on that second module. So basically, the test is going to be constantly evaluating your skills and giving you questions that are just the right level of challenging for you.
Similarly, if you bomb your first module, you'll see easier questions in the second one. Again, your score will be based on how you do in that second module.

So wait a minute, why don't I intentionally make mistakes in the first module and get easier questions in the second one- seems like I have got the hack!
NO!! This is not how the scoring works.

So here's the thing about adaptive tests: how you do on the first set of questions can really make a difference in your overall score. So, if you're one of those students who really shines right out of the gate, this new format for the SAT might be perfect for you. However, if you're someone who needs a little bit of time to get into the swing of things and find your rhythm, this adaptive testing model might be a bit more of a challenge.

If you end up seeing a lot of difficult questions in the second module of each section, it's safe to assume that you did pretty well on the first module. That's because, in each module, you only have two "pre-test" or unscored questions, so if you're seeing a lot of challenging questions in the second module, it only means you must have done well on the first one.

If you end up seeing easier questions in the second module of each section, it might mean that you didn't do as well on the first module. But the important thing to remember is to focus on the present and do your best on the questions in front of you, rather than dwelling on the past. So even if you didn't do as well on the first module, you can still try to make up for it by giving it your all on the second module. That's all that matters!

THE SAT SYLLABUS DEMYSTIFIED

READING AND WRITING SAT SYLLABUS:
Primarily, the SAT Reading and Writing section is divided into just four major categories.

Standard English Conventions:

Measures the ability to edit texts to conform to core conventions of Standard English sentence structure, usage, and punctuation.

Take a look at these common question types:
- Punctuations
- Tenses
- Apostrophes
- Structure
- Form
- Boundaries

Collegeboard wants to test us on our editing skills and make sure we know how to identify errors in Standard English conventions. Around 26% of the questions, or about 11-15 of them, will be on stuff like sentence structure, word usage, and punctuation. It's super important to get these right, and once you get the hang of some typical elimination strategies, it can be pretty easy.

To further explore the questions of this category, click here.

Information and Ideas:

Measures comprehension, analysis, and reasoning skills and knowledge and the ability to locate, interpret, evaluate, and integrate information and ideas from texts and informational graphics (tables, bar graphs, and line graphs).

Take a look at these common question types:
- Main theme/ Primary purpose
- Inferences
- Central ideas and details
- Textual command of evidence
- Graphical (Quantitative) command of evidence

CollegeBoard wants to see how well you can interpret information and ideas! We've counted about 28% of the questions (around 15 of them) that will test your comprehension skills. Get ready to show off those brain muscles! There are some tricks to ace these interpretation question categories, we will discuss them in the strategies section.

To further explore the questions of this category, click here.

Expression of Ideas:

Measures the ability to revise texts to improve the effectiveness of written expression and to meet specific rhetorical goals.

Take a look at these common question types:
- Rhetorical synthesis
- Transitions (as we call it 'structure' words)

Collegeboard wants to test you on your ability to revise texts in order to improve their effectiveness and achieve specific goals. This means really thinking about your writing and making changes to things like word choice, sentence structure, and organization to better convey our ideas and get our message across. The concept of clear and effective communication is really important, and about 20% of the questions, or around 8 to 12 of them, will be on this in the "Expression of Ideas" category.

To further explore the questions of this category, click here.

Craft and Structure:

Measures the comprehension, vocabulary, analysis, synthesis, and reasoning skills and knowledge needed to understand and use high-utility words and phrases in context, evaluate texts rhetorically, and make connections between topically related texts.

Take a look at these common question types:
- Words in context
- Text structure and purpose
- Cross-text connections

Looks like CollegeBoard has been busy! We've gone through all their practice test papers released so far and it seems like about 26% of the questions (around 14 of them out of 54) are in the Craft and Structure format. Time to brush up on those skills!

To further explore the questions of this category, [click here.](#)

THE SAT SYLLABUS DEMYSTIFIED

MATH SECTION SYLLABUS:

The syllabus for the math section, like that for the reading and writing section, is divided into four main topics.

Algebra:

Measures the ability to analyze, fluently solve, and create linear equations and inequalities as well as analyze and fluently solve equations and systems of equations using multiple techniques

Knowledge tested: Algebra will make up a significant portion of the test, with about 35% of the questions, or around 13 to 15, covering concepts like linear equations and functions, systems of linear equations, and linear inequalities. It's time to brush up on your x's and y's and show off your algebraic skills.

To further explore the questions of this category, click here.

Advanced Math:

Measures skills and knowledge central for progression to more advanced math courses, including demonstrating an understanding of absolute value, quadratic, exponential, polynomial, rational, radical, and other nonlinear equations

Knowledge tested: SAT Math section is also going to test your skills in advanced math topics like equivalent expressions, nonlinear equations and functions, and systems of equations. You can expect about 35% of the questions, or around 13 to 15, to focus on these concepts. Get ready to flex those brain muscles! This is one of those sections where you can use DESMOS or graphing calculators to your advantage.

To further explore the questions of this category, click here.

Problem-Solving and Data Analysis:

Measures the ability to apply quantitative reasoning about ratios, rates, and proportional relationships; understand and apply unit rate; and analyze and interpret one- and two-variable data.

Knowledge tested: The problem-solving and data analysis section of the SAT Math section is going to challenge your skills in ratios, rates, and percentages. You'll have the chance to show off your skills on about 5 to 7 questions, or about 15% of the section. But that's not all - you'll also need to be proficient in working with one- and two-variable data, understanding probability, and statistical inference, and evaluating statistical claims through observational studies and experiments.

To further explore the questions of this category, click here.

Geometry and Trigonometry:

Measures the ability to solve problems that focus on area and volume; angles, triangles, trigonometry; and circles.

Knowledge tested: SAT Math section will have a decent focus on geometry and trigonometry, with around 5 to 7 questions, or about 15%, covering topics like lines, angles, triangles, circles, areas, and more. You'll need to be proficient in finding areas and volumes and have a strong understanding of right triangles and circles.

To further explore the questions of this category,

02

PART TWO:

MOVE IT OR LOSE IT (ADAPTING FOR THE DIGITAL SAT TEST)

MOVE IT OR LOSE IT (ADAPTING FOR THE DIGITAL SAT TEST)

DEMOS THE GAME-CHANGER!

If you want to ace the SAT, it's crucial that you master the Desmos calculator. Trust us, those function questions won't solve themselves! But don't worry, we're here to help you get a handle on this essential tool. So let's dive in and see what Desmos can do!

The Desmos Graphing Calculator is a powerful and interactive online tool that allows users to graph and solve a wide range of math problems using two-dimensional Cartesian or polar coordinates. It is particularly useful for students taking the Digital SAT, as calculators are allowed for all math problems and Desmos is integrated into the testing environment. By becoming proficient in using Desmos, students can maximize their SAT math score and demonstrate their skills to the fullest extent. In addition to its graphing capabilities, Desmos also includes numerous built-in functions for statistical analysis, higher math including calculus, and interactive animation. While the calculator may seem overwhelming at first, it is possible to efficiently master the essential skills needed to succeed on the Digital SAT by following our expertly curated lessons.

The Desmos Graphing Calculator is different from traditional handheld graphing calculators in a few key ways. While both can graph equations, Desmos allows for the entry of an unlimited number of items using a keyboard, whereas handheld calculators have specialized buttons for input. Additionally, handheld calculators typically show solutions directly, while Desmos represents them visually through graph elements such as points of intersection. It is important to note that Desmos is not an algebraic solving calculator like Wolfram Alpha, but it does have some limited solving capabilities that can be helpful in certain situations. It is essential to approach the Desmos Graphing Calculator with an open mind and not try to force it to behave like a handheld calculator. While it may have some limitations, Desmos is a powerful and flexible tool that is easier to use than traditional calculators.

When facing a math problem on the Digital SAT, **it is important to consider whether using Desmos will be the most efficient and effective approach**. While it can be tempting to rely on the graphing calculator for all types of problems, it is important to maintain strong algebraic skills and be aware of situations where using Desmos may be more time-consuming than solving the problem manually. To develop a well-rounded approach, we recommend practicing both algebraic and Desmos solutions for a variety of problem types. This will not only enhance your skills with the graphing calculator, but also improve your decision-making skills in determining the best solution method.

The best way to determine when to use Desmos for solving math problems is through practice and familiarity with the tool. While there are certain situations where Desmos can be particularly useful in saving time, the decision ultimately depends on the individual student's comfort level and proficiency with the calculator.

Limitations of Desmos:
While the Desmos Graphing Calculator is a powerful tool, it does have some limitations to be aware of. It does not perform symbolic algebra and cannot symbolically solve equations for an unknown variable. In addition, it may not display coordinates for some solution lines, making it difficult to determine the exact value of the solution. In these cases, it may be necessary to graph each side of the equation separately and view the coordinates of the intersection point for more precision. It is important to be aware of these limitations and consider alternative solution methods when necessary.

To provide a comprehensive understanding of how to effectively use Desmos for the Digital SAT, we have developed a course specifically focused on this topic. Our course, "Mastering Digital SAT Math with DESMOS: Basics to Beyond," covers the various ways in which Desmos can be utilized to solve math problems on the test. Click here to enroll and start learning how to leverage the full potential of Desmos for the Digital SAT.

COMMON MISTAKES? KEEP YOUR DISTANCE AND SWIPE LEFT

Listen up, SAT-takers! As someone who has spent a lot of time working with students like you on the SAT and other adaptive exams, I've noticed that there are a few areas where people tend to struggle. I'm sharing this information with you so that you can avoid making the same mistakes and set yourself up for success. Avoid these common pitfalls and you'll be well on your way to a top score.

Understanding Question category:
First things first, the Reading and Writing section of the exam now consists of 54 separate passages, so it's crucial that you put in the time to practice for these questions. To succeed, you'll need to improve your reading speed and focus on understanding which question category each question belongs to. This will help you better anticipate how to approach each question. Additionally, be sure to pay attention to common error patterns and work on correcting them. Consistent practice and attention to detail will give you a major advantage on test day. Click here to understand error logging better.

Getting lost in story of passage:
Don't get too caught up in the drama of the passages on the Reading and Writing section of the SAT - remember, you're there to answer questions, not get lost in the story! Make sure you're keeping an eye on the question type and working on POE (process of elimination) so you can ace this portion of the exam. Forget about enjoying the tale - on the SAT Reading and Writing section, the only thing that matters is getting the answers right.

Don't Get Stuck on a Tough Nut: The Art of Priority-Solving on the SAT
On an adaptive test like the SAT, it is important to focus on accurately answering as many questions as possible. However, don't get stuck on a difficult question for too long. Instead, take note of it and move on to the other questions, tackling the easier ones first. This will allow you to make progress and increase your chances of a higher score. When you have finished the rest of the exam, you can then come back to the more challenging questions with a fresh perspective. Remember, focusing on the lower-hanging fruit first is key to success in this format of the SAT.

Using digital format to advantage:
The digital format of the SAT offers several benefits that can help you improve your score. First and foremost, practicing with official resources will give you a better idea of what to expect on test day and help you get accustomed to the online platform. The College Board's Bluebook software is a great place to start. Additionally, the digital format allows you to flag questions for review and provides a timer right on the screen, giving you more control and awareness during the exam. Utilizing these resources and features can give you an edge on test day and help you achieve a higher score.

Scratch Your Way to Success: The Power of Process of Elimination on the SAT
While the digital format of the SAT may make it tempting to skip the scratch paper, it can actually be very beneficial in helping you alleviate screen strain, increase satisfaction, and stay focused. Boost your confidence and focus on the SAT by using scratch paper to your advantage. The process of elimination can help you feel more in control and accomplished, and the physical act of writing can help you relax during the exam. Don't be afraid to utilize this resource - it may just give you the edge you need on test day. Don't miss out on the benefits - make scratch paper a part of your testing strategy.

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PART THREE:

GET READY TO SHINE (MAXIMIZING YOUR SCORE ON THE DIGITAL SAT TEST)

GET READY TO SHINE (MAXIMIZING YOUR SCORE ON DIGITAL SAT TEST)

SLAY THAT SCORE - SPECIFIC SCORING STRATEGIES

Now that we have a good understanding of the structure and content of the digital SAT, let's talk about some testing strategies that can help us succeed. One thing to keep in mind is that the questions in each section of the test are generally arranged from easiest to hardest, with a few exceptions. For example, in the reading and writing section, the questions within the Craft and Structure, Information and Ideas, and Expression of Ideas content domains that test similar skills and knowledge are grouped to reduce the need for context switching and arranged from easiest to hardest. On the other hand, the questions in the Standard English Conventions domain are always arranged from easiest to hardest, regardless of which specific convention is being tested.

So, what can we do with this information?

Well, since the **difficulty level of the questions increases within each section**, it's important to **make sure we get the easier questions right**. This is especially important in an adaptive test like the digital SAT, where our performance in one section can impact our difficulty level in the next. By getting the easier questions right, we can set ourselves up for success in the later sections and increase our chances of getting a high percentile score.

Remember, it's all about building a strong foundation and letting the (scoring) machine know that your fundamentals are in the right place!

KEY POINT

Don't forget, getting the easier questions wrong will set you back much more than getting a harder question wrong. Therefore, it's crucial to make sure you get the easier questions right, even if it means taking a bit more time to carefully read and understand them. Make sure to prioritize getting those initial, simpler questions correct in order to give yourself the best chance at success on the test.

04

PART FOUR:

HIT EM' WITH YOUR BEST STUFF (PRACTICING & REVIEWING FOR THE DIGITAL SAT TEST)

HIT EM' WITH YOUR BEST STUFF (PRACTICING & REVIEWING FOR THE DIGITAL SAT TEST)

LEVEL UP WITH ANANNT'S DIGITAL RESOURCES AND STRATEGIES

Let's face it - cramming everything you need to know for the SAT into a single book can be overwhelming. That's why we've created a whole bunch of courses to help you prepare in the way that works best for you. If you're in Dubai or Pune, you can join us in person at one of our centers. And for those of you who are further away, don't worry - we've got you covered with LIVE online classes as well. Our customized prep and small batch sizes have earned us a reputation for excellence, and we're constantly working on new online courses to keep things interesting. So don't stress about fitting everything into a single book - check out our list of courses and find the one that's right for you!

Need some personalized SAT prep help?

Drop me a line at wecare@anannt.ae or give me a ring or whatsapp text at +971585853551. I'm always happy to chat and see how I can help you succeed on the exam. And if you just want to share your thoughts or give me some feedback, I'm all ears! Let's get you prepped and ready to rock the SAT.

SAT Reading and Writing Bootcamp: The Comprehensive Practice Guide
This is the ultimate practice resource for students preparing for the SAT reading and writing section. With over 800 realistic practice questions, this quiz is designed to fully prepare you for the level of difficulty and variety of question types you can expect on the actual exam.

Our adaptive technology ensures that you are challenged at the right level, so you can focus on the areas where you need the most improvement. And with a range of question types, including multiple choice, fill-in-the-blank, and essay writing, you'll be fully equipped to tackle any challenge the SAT throws your way.

Don't just take our word for it - try out the quiz for yourself and see the difference in your test scores. With our "Adaptive Portal Quiz," you'll be well on your way to achieving reading and writing mastery on the digital SAT! Predicted launch by 31st Jan 2023. Achieve reading and writing mastery on the SAT - [subscribe now to get started](#)!

SAT Reading and Writing Ninja: A Comprehensive Guide for Online Success
This course is like a trusty sidekick, guiding you through all the ins and outs of the SAT reading and writing section. It's got everything you need to become a master of vocabulary, grammar, and reading comprehension. And if that wasn't enough, it also comes equipped with ninja-worthy test-taking strategies to help you tackle every single question type like a pro. We are planning to launch this online course by mid of February.

SAT Online Group class demo session
Feeling curious about how we train? Follow this [link to register](#) for our demo class and get a sneak peek at what we're all about! Don't miss out on this opportunity to see for yourself how we can help you ace the SAT. See you in class!

Guide to Using the Last Section of our Digital SAT Success Book:
Okay gang, it's time to put all those fancy strategies to the test! In the next section, you'll find a bevy of questions specific to the categories covered in our Digital SAT Success course. These questions are designed to give you a taste of what to expect on the actual exam. And to make sure you fully understand how to tackle each question, we've linked explanations for each one to our online portal. All you have to do is click on the explanation link, sign up for access, and boom - you'll have all the answers at your fingertips. So go ahead and give it a shot - we've got approximately 200 questions waiting for you! And remember, if you have any questions or just want to say hi, feel free to reach out. Happy studying, and we'll see you in our upcoming courses. Chao!

04

PART FOUR:

HIT EM' WITH YOUR BEST STUFF (PRACTICING & REVIEWING FOR THE DIGITAL SAT TEST)

➔ Chapter 8: Get a Leg Up on the SAT with Genuine Practice Questions (MATH)

- LINEAR EQUATIONS IN ONE VARIABLE & LINEAR EQUATIONS IN TWO VARIABLES

- LINEAR FUNCTIONS

- SYSTEMS OF TWO LINEAR EQUATIONS IN TWO VARIABLES

- LINEAR INEQUALITIES IN ONE OR TWO VARIABLES

- EQUIVALENT EXPRESSIONS

- NONLINEAR EQUATIONS IN ONE VARIABLE AND SYSTEMS OF EQUATIONS IN TWO VARIABLES

- NONLINEAR FUNCTIONS

- RATIOS, RATES, PROPORTIONAL RELATIONSHIPS, AND UNITS

- PERCENTAGES

- ONE-VARIABLE DATA: DISTRIBUTIONS AND MEASURES OF CENTER AND SPREAD

- TWO-VARIABLE DATA: MODELS AND SCATTER PLOTS

- PROBABILITY AND CONDITIONAL PROBABILITY

- INFERENCE FROM SAMPLE STATISTICS AND MARGIN OF ERROR

- EVALUATING STATISTICAL CLAIMS: OBSERVATIONAL STUDIES AND EXPERIMENTS

- AREA AND VOLUME

- LINES, ANGLES, AND TRIANGLES

- RIGHT TRIANGLES AND TRIGONOMETRY

- CIRCLES

LINEAR EQUATION IN ONE VARIABLE & LINEAR EQUATION IN TWO VARIABLES

1. $4x + 6 = 8$

Which equation has the same solution as the given equation?

    A. $4x = 108$
    B. $4x = 24$
    C. $4x = 12$
    D. $4x = 3$

<div align="right">

[Explanation](#)

</div>

2. $\sqrt{x} + 4 = 12$

Which of the following is the solution to the equation above?

    A. 8
    B. 16
    C. 64
    D. 140

<div align="right">

[Explanation](#)

</div>

3. If $4x + 2 = 12$, what is the value of $16x + 8$?

    A. 40
    B. 48
    C. 56
    D. 60

<div align="right">

[Explanation](#)

</div>

4. $5 (x - 3) = 10x + 5$

What value of x satisfies the equation above?

    A. -4
    B. 1
    C. 5
    D. 15

<div align="right">

[Explanation](#)

</div>

5. k + 12 = 336

What is the solution to the given equation?

    A. 28
    B. 324
    C. 348
    D. 4,032

6. C = 10x + 4y

The formula above gives the monthly cost C, in dollars, of operating a delivery truck when the driver works a total of x hours and when y gallons of gasoline are used. If, in a particular month, it cost no more than $2,000 to operate the truck and at least 150 gallons of gas were used, what is the maximum number of hours the driver could have worked?

    A. 125
    B. 140
    C. 500
    D. 1,400

7. 0.8p = t

At a store, a coat originally priced at p dollars is on sale for t dollars, and the relationship between p and t is given in the equation above. What is p in terms of t?

    A. $p = t - 0.8$
    B. $p = 0.8t$
    C. $p = \dfrac{0.8}{t}$
    D. $p = \dfrac{t}{0.8}$

8. If $2\sqrt{2x} = a$, what is $2x$ in terms of a?

    A. $\frac{a}{2}$

    B. $\frac{a^2}{4}$

    C. $\frac{a^2}{2}$

    D. $4a^2$

<div align="right">

</div>

9. $2s + t = 11$

In the equation above, what is the value of s when $t = -1$?

<div align="right">

</div>

10. Jamila plans to invest $300 by buying shares of two different stocks. Stock A costs $5.62 per share and Stock B costs $12.97 per share. Which equation represents the number of shares of these stocks Jamila can buy, where a is the number of shares of Stock A and b is the number of shares of Stock B?
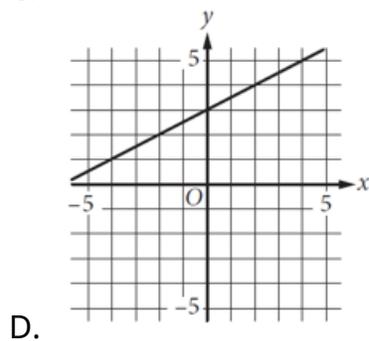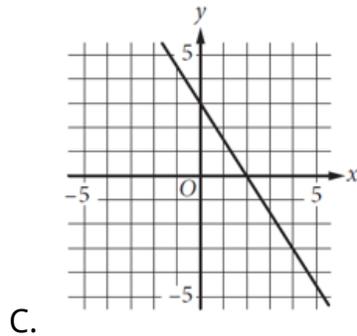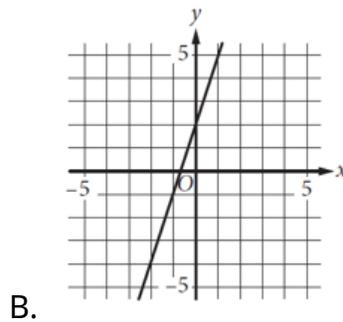
(Assume that there are no fees.)

    A. $12.97a + 5.62b = 300$

    B. $12.97a - 5.62b = 300$

    C. $5.62a + 12.97b = 300$

    D. $5.62a - 12.97b = 300$

<div align="right">

</div>

LINEAR FUNCTIONS

11. Which of the following is the graph of the equation $y = 2x + 3$ in the xy - plane?

A.

B.

C.

D.
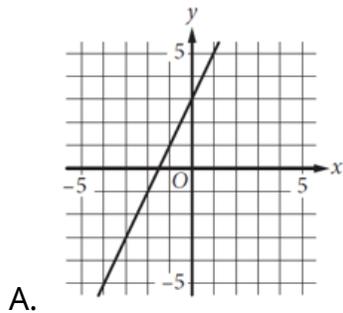
12. The boiling point of water at sea level is 212 degrees Fahrenheit (°F). For every increase of 1,000 feet above sea level, the boiling point of water drops

approximately 1.84°F. Which of the following equations gives the approximate boiling point B, in °F, at h feet above sea level?

    A. $B = 212 - 1.84h$
    B. $B = 212 - (0.00184)h$
    C. $B = 212h$
    D. $B = 1.84(212) - 1,000h$

13. A pool initially contains 1,385 cubic feet of water. A pump begins emptying the water at a constant rate of 20 cubic feet per minute. Which of the following functions best approximates the volume $v(t)$, in cubic feet, of water in the pool t minutes after pumping begins, for $0 \le t \le 69$?

    A. $v(t) = 1,385 - 20t$
    B. $v(t) = 1,385 - 69t$
    C. $v(t) = 1,385 + 20t$
    D. $v(t) = 1,385 + 69t$

14. In the xy - plane, line l passes through the points $(0,1)$ and $(1,4)$. Which of the following is an equation of line l?

    A. $y = \frac{1}{3}x + 1$
    B. $y = \frac{1}{3}x - 1$
    C. $y = 3x + 1$
    D. $y = 3x - 1$

15. The graph of the linear function f is shown. Which of the following defines f?
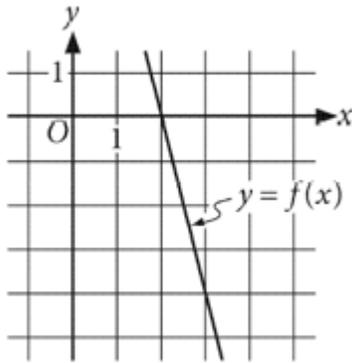
A. $F(x) = -4x + 2$

B. $f(x) = -4x + 8$

C. $f(x) = -\frac{1}{4}x + 2$

D. $f(x) = -\frac{1}{4}x + 8$

Explanation

SYSTEMS OF TWO LINEAR EQUATIONS IN TWO VARIABLES

16. A farmer sold 108 pounds of produce that consisted of z pounds of zucchini and c pounds of cucumbers. The farmer sold the zucchini for $1.69 per pound and the cucumbers for $0.99 per pound and collected a total of $150.32. Which of the following systems of equations can be used to find the number of pounds of zucchini that were sold?

   A) $z + c = 150.32$

      $1.69z + 0.99c = 108$

   B) $z + c = 108$

      $1.69z + 0.99c = 150.32$

   C) $z + c = 108$

      $0.99z + 1.69c = 150.32$

   D) $z + c = 150.32$

      $0.99z + 1.69c = 108$

17. $x + 2y = 16$

   $0.5x - y = 10$

The solution to the system of equations above is (x, y). What is the value of x?

   A. -2

   B. 2

   C. 18

   D. 36

18. $x + y = 21$

   $x - 2y = -3$

According to the system of equations above, what is the value of x?

   A. 6

   B. 8

   C. 13

   D. 15

19. $2x - y = -4$

   $2x + y = 4$

For the solution of the system of equations above, what is the value of x?

   A. -4

   B. -2

   C. 0

   D. 2

20. $3x + 2y = 16$

   $6x + 2y = 28$

If the system of equations above has solution (x, y), what is the value of $x + y$?

LINEAR INEQUALITIES IN ONE OR TWO VARIABLES

21. Ryan has 1,500 yards of yarn. He wants to knit at least 2 scarves and at least 3 hats. Each scarf requires 300 yards of yarn, and each hat requires 120 yards of yarn. If s represents the number of scarves and h represents the number of hats, which of the following systems of inequalities represents this situation?

A) $s + h \leq 1,500$

$s \geq 2$

$h \geq 3$

B) $2s + 3h \leq 1,500$

$s \geq 2$

$h \geq 3$

C) $2s + 3h \leq 1,500$

$s \geq 300$

$h \geq 120$

D) $300s + 120h \leq 1,500$

$s \geq 2$

$h \geq 3$

22. When 9 is increased by $3x$, the result is greater than 36. What is the least possible integer value for x?

23. $y \geq -2x + 11$

   $y > 3x - 9$

In the *xy*-plane, point *A* is contained in the graph of the solution set of the system of inequalities above. Which of the following could be the coordinates of point *A*?

  A. (2, 1)

  B. (4, 1)

  C. (4, 5)

  D. (6, 6)

24. Jonathan needs to earn at least $175 next week and can work at most 20 hours. He earns $10 per hour at his lawn service job and $8 per hour at his job at the gym. Which of the following systems of inequalities represents this situation in terms of the number of hours he will work at his lawn service job, *l*, and the number of hours he will work at his job at the gym, *g*, next week?

  A. $10l + 8g \leq 175$

     $l + g \leq 20$

  B. $10l + 8g \leq 175$

     $l + g \geq 20$

  C. $10l + 8g \geq 175$

     $l + g \leq 20$

  D. $10l + 8g \geq 20$

     $l + g \geq 175$

25. During an ice age, the average annual global temperature was at least 4 degrees Celsius lower than the modern average. If the average annual temperature of an ice age is *y* degrees Celsius and the modern average annual temperature is *x* degrees Celsius, which of the following must be true?

    A. $y = x - 4$

    B. $y \leq x + 4$

    C. $y \geq x - 4$

    D. $y \leq x - 4$

<div align="right">

[Explanation](#)

</div>

EQUIVALENT EXPRESSIONS

26. If x > 0, which of the following is equivalent to $\frac{1}{x} + \frac{1}{2x}$?

    A. $\frac{1}{x}$

    B. $\frac{1}{2x}$

    C. $\frac{3}{2x}$

    D. $\frac{2}{3x}$

<div align="right">

[Explanation](#)

</div>

27. Which expression is equivalent to $(2x^2 + 3x - 2) - (5x^2 - x - 7)$?

    A. $7x^2 + 4x + 9$

    B. $3x^2 + 4x + 5$

    C. $-3x^2 + 2x - 9$

    D. $-3x^2 + 4x + 5$

<div align="right">

[Explanation](#)

</div>

28. $4T - 8D = 12H$

The give equation can be rewritten as $T = aD + bH$, where a and b are constants. What is the value of a?

29. $\frac{1}{2}x + 5 = kx + 7$

In the given equation, k is a constant. The equation has no solution. What is the value of k?

30. Which expression is equivalent to $\sqrt[5]{x^3} \cdot \sqrt[5]{x}$, where $x > 0$?

    A. $x^{\frac{4}{5}}$

    B. $x^{\frac{5}{4}}$

    C. $x^{\frac{3}{25}}$

    D. $x^{\frac{25}{3}}$

NONLINEAR EQUATIONS IN ONE VARIABLE AND SYSTEMS OF EQUATIONS IN TWO VARIABLES

31. $x(x + 2) = 8$

Which of the following lists all solutions to the quadratic equation above?

    A. 8 and 6

    B. 4 and - 2

    C. - 4 and 2

    D. $\sqrt{6}$

<div align="right">

[Explanation](#)

</div>

32. $x^2 - 6x + 11 = y$

   $x = y + 1$

The system of equations above is graphed in the xy-plane. Which of the following is the y-coordinate of an intersection point (x, y) of the graphs of the two equations?

    A. -4

    B. -2

    C. 2

    D. 4

<div align="right">

[Explanation](#)

</div>

33. If $x^4 - y^4 = -15$ and $x^2 - y^2 = -3$, what is the value of $x^2 + y^2$?

    A. 5

    B. 4

    C. 2

    D. 1

<div align="right">

[Explanation](#)

</div>

34. The polynomial $p^4 + 4p^3 + 3p^2 - 4p - 4$ can be written as $(p^2 - 1)(p + 2)^2$. What are all of the roots of the polynomial?

     A. -2 and 1

     B. -2, 1, and 4

     C. -2, -1, and 1

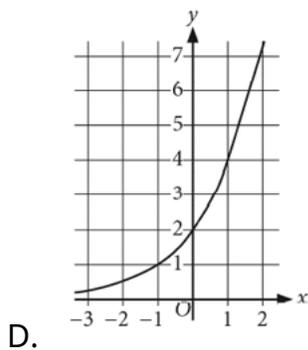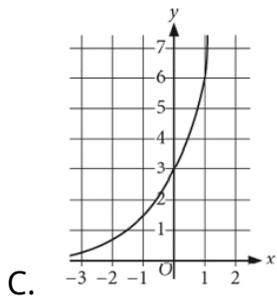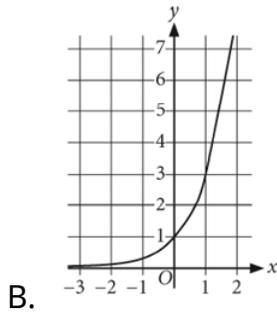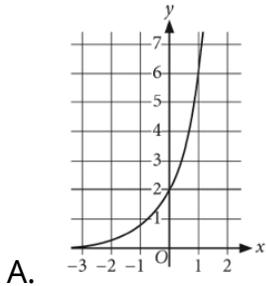   D. -1, 1, and 2

35. $x^2 - 5x + 3 = 0$

The solutions to the equation above can be written in the form $\frac{5 \pm \sqrt{k}}{2}$, where k is a constant. What is the value of k?

NONLINEAR FUNCTIONS

36. What is the graph of the equation y = $2(3)^x$?

A.

B.

C.

D.

Explanation

37. The graph of the function f is shown. Which of the following is a value of x for which $f(x) = 0$?

A. -1

B. 0

C. 1

D. 4
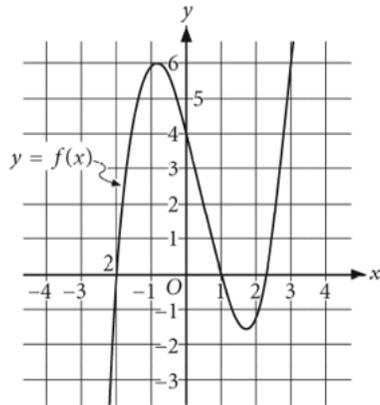
38. The function $A(t) = 12(2)^{\frac{t}{6}}$ models the number of water hyacinths in a population over time, where $A(t)$ is the number of water hyacinths and t is the time, in days, since the population was first measured. Which is the best interpretation of $(2)^{\frac{t}{6}}$ in this context?

A. The number of water hyacinths doubled t times.

B. The number of water hyacinths doubled every 6 days.

C. The number of water hyacinths increased by 2 every $\frac{t}{6}$ days.

D. The number of water hyacinths increased by 2 every t days.

39. What is the y-coordinate of the y-intercept of the graph of $y = 3^x + 9$?

40. The graph of y = $(x + k)^2$, where k is a constant, is shown. What is the value of k?
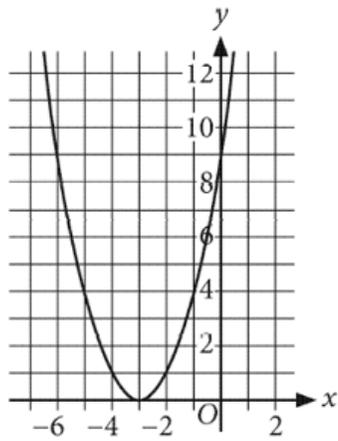
A. -3
B. 0
C. 3
D. 9

Explanation

RATIOS, RATES, PROPORTIONAL RELATIONSHIPS, AND UNITS

41. Nutritional Information for 1 - Ounce Servings of Seeds and Nuts

Seed or nut	Calories	Total fat (grams)	Protein
Pecan	198	20.2	3.0
Pistachio	80	6.5	3.0
Pumpkin	159	13.9	8.5
Sunflower	166	14.6	5.9
Walnut	185	18.5	4.3

The table above shows the calories, grams of fat, and grams of protein in 1-ounce servings of selected seeds and nuts.

How many more grams of protein are in one <u>pound</u> of pumpkin seeds than are in one <u>pound</u> of pistachios? (1 pound = 16 ounces)

    A. 48
    B. 72
    C. 88
    D. 136

42. A greenhouse owner purchases fertilizer in 60-gallon drums. The fertilizer is mixed with water to make several batches of solution. Each batch of solution is made by mixing 3 quarts of fertilizer with water. What is the maximum number of batches of solution that can be made from one 60-gallon drum of fertilizer? (1 gallon = 4 quarts)

    A. 45
    B. 60
    C. 80
    D. 180

43. During a storm, the atmospheric pressure in a certain location fell at a constant rate of 3.4 millibars (mb) per hour over a 24-hour time period. Which of the following is closest to the total drop in atmospheric pressure, in millimeters of mercury (mm Hg), over the course of 5 hours during the 24-hour time period? (Note: 1,013 mb = 760 mm Hg)

    A. 2.6

    B. 12.8

    C. 17.0

    D. 22.7

44. The load capacity of a certain washing machine is 12 pounds. What is the approximate load capacity of the same washing machine, in <u>kilograms</u>? (1 kilogram = 2.2046 pounds)

    A. 2.2
    B. 5.4
    C. 9.8
    D. 26.5

45. George took a nonstop flight from Dallas to Los Angeles, a total flight distance of 1,233 miles. The plane flew at a speed of 460 miles per hour for the first 75 minutes of the flight and at a speed of 439 miles per hour for the remainder of the flight. To the nearest minute, for how many <u>minutes</u> did the plane fly at a speed of 439 miles per hour?

46. Anna was 99 centimeters tall the day she turned 3 years old, and she was 106.5 centimeters tall the day she turned 4 years old. If Anna's height increases by the same amount each year between the ages of 2 and 8, how many centimeters tall will she be the day she turns 7 years old?

47. A contractor purchased two slabs of granite, both in the shape of a right rectangular prism. The table below shows some information about the two slabs.

	Length	Width	Thickness	Mass
Slab 1	100 centimeters	20 centimeters	8 centimeters	44,000 grams
Slab 2	125 centimeters		8 centimeters	

Slab 2 has a ratio of length to width of 5 to 2. How many centimeters wide is Slab 2?

Explanation

48. The gravitational potential energy of an object near the surface of Earth is proportional to its height above Earth's surface. An object near Earth's surface is at height h and has gravitational potential energy P. If the object's height doubles while remaining near Earth's surface, which expression gives the gravitational potential energy of the object in terms of P?

A. $\frac{1}{4}P$
B. $\frac{1}{2}P$
C. 2P
D. 4P

Explanation

49. The net force, in newtons, acting on an object is proportional to the object's mass, in kilograms (kg), when the acceleration, in meters per second squared (m/s^2), is constant. Two objects, one of mass 70 kg and the other of mass 50 kg, have accelerations of 4 m/s^2 in the same direction. If the force acting on the 70 kg object is 280 newtons, what is the force, in newtons, acting on the 50 kg object?

Explanation

50. A certain blue whale calf weighed 5500 pounds when it was born, and its weight increased at a rate of 250 pounds per day for the first n days, where n is an integer. If the calf's weight was greater than 8000 pounds but less than 9000 pounds n days after birth, what is one possible value of n?

<div align="right">Explanation</div>

PERCENTAGES

51. Kate bought a bus pass that had an initial value of $90. For every bus ride Kate takes, $1.80, the cost of one bus ride, is subtracted from the value of the pass. What percent of the initial value of Kate's bus pass is the cost of one bus ride?

    A. 1.8%
    B. 2%
    C. 5%
    D. 98%

<div align="right">Explanation</div>

52. The budget for a school band was $8,000 in 2010. The budget decreased by 15% from 2010 to 2011 and then increased by 22% from 2011 to 2012. Which of the following expressions represents the budget, in dollars, for the school band in 2012?

    A. (1.15) (1.22) (8,000)
    B. (0.85) (1.22) (8,000)
    C. (1.15) (0.78) (8,000)
    D. (0.85) (0.78) (8,000)

<div align="right">Explanation</div>

53. Kelly enlarged the area of a photograph to 250% of its original size. The original dimensions of the photograph were 5 inches by 7 inches. What is the area of the enlarged photograph, in square inches?

    A. 71.25
    B. 87.5
    C. 218.75
    D. 3,000

54. Hongbo sold x cell phones in 2013. The number of cell phones he sold in 2014 was 128% greater than in 2013, and the number of cell phones he sold in 2015 was 29% greater than in 2014. Which of the following expressions represents the number of cell phones Hongbo sold in 2015?

    A. $(0.29)(1.28x)$
    B. $(0.29)(2.28x)$
    C. $(1.29)(1.28x)$
    D. $(1.29)(2.28x)$

55. Cars Registered in Town X

Car color	Percent of registered cars
Black	13%
Blue	7%
Gray	7%
Silver	28%
White	32%
Other	13%

The table above shows the distribution of color for the 4000 cars registered in Town X. Based on the table, how many more white cars than black cars are registered in Town X?

ONE-VARIABLE DATA: DISTRIBUTIONS AND MEASURES OF CENTER AND SPREAD

56.
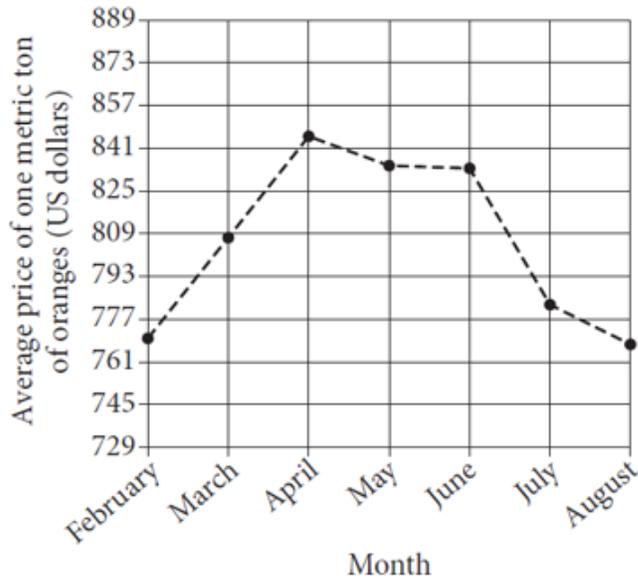
The line graph above shows the average price of one metric ton of oranges, in dollars, for each of seven months in 2014.

Which of the following is closest to the median price, in dollars, of the seven recorded prices of one metric ton of oranges?

A. 834
B. 808
C. 783
D. 768

57.

Data set A	22,550	40,430	49,150	62,590	73,670	118,780	126,040
Data set B	22,860	55,020	173,730	300,580	358,920	456,170	603,300

Which of the following is true about the standard deviations of the two data sets in the table above?

A. The standard deviation of data set B is larger than the standard deviation of data set A.
B. The standard deviation of data set A is larger than the standard deviation of data set B.
C. The standard deviation of data set A is equal to the standard deviation of data set B.
D. There is not enough information available to compare the standard deviations of the two data sets.

Explanation

58.

Sample	Sample size	Length (inches)		
		Minimum	Maximum	mean
A	11	15.0	20.0	18.0
B	20	12.5	22.5	17.2

The table shows the minimum, maximum, and mean lengths, in inches, of brown trout in two different samples. The sample sizes are also shown.

Which of the following statements must be true?

I. The length of each trout in sample A is greater than the length of each trout in sample B.

II. The range of the lengths of the trout in sample A is greater than the range of the lengths of the trout in sample B.

    A. I only
    B. II only
    C. I and II
    D. Neither I nor II

Explanation

59. There are 10 rare coins in a collection. If the value of each of the 10 coins increases by $2, which of the following will be true?

    A. The new mean of the values will be $2 more than the previous mean, but the standard deviation will remain the same.
    B. The mean of the values will remain the same, but the new standard deviation will be $2 more than the previous standard deviation.
    C. Both the new mean and standard deviation of the values will be $2 more than the previous mean and standard deviation.
    D. Neither the mean nor the standard deviation of the values will change.

Explanation

60. Automobile Insurance in a Certain US City

1,400 1,600 1,800 2,000 2,200 2,400 2,600 2,800
Annual cost (dollars)
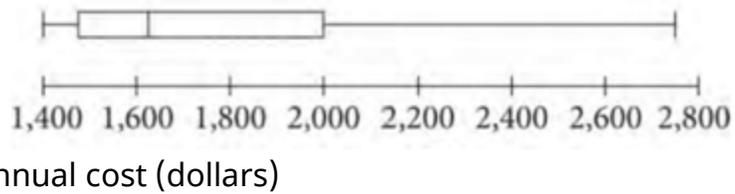
The box plot summarizes the data for the annual cost of automobile insurance for automobile owners in a certain US city. Which of the following could be the median annual cost of automobile insurance for automobile owners in this city?

A. $1,625
B. $2,000
C. $2,100
D. $2,750

Explanation

TWO-VARIABLE DATA: MODELS AND SCATTER PLOTS

61. A researcher is investigating the relationship between the price of a four-pack of AA batteries at a convenience store and the number of competitors the store has. She defines a store's competitor as another similar store within a 1- mile radius of the store she selects. She selects 32 convenience stores across a state at random, and for each store, she records the number of its competitors and its price for a four-pack of AA batteries. The results are shown, along with the line of best fit, in the scatterplot below.
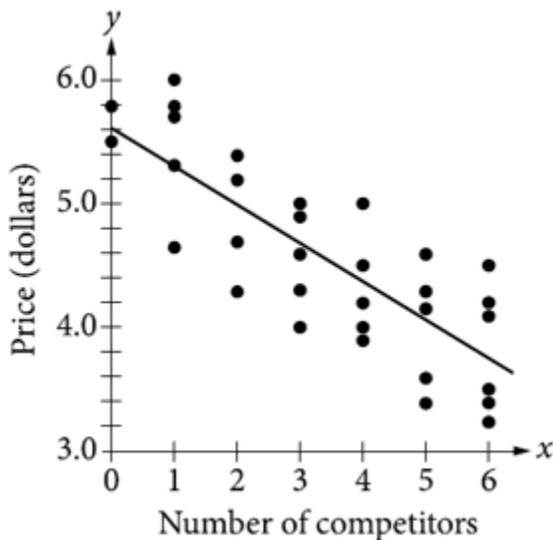
The line of best fit passes through the point (18, -0.12). Which of the following can be concluded from this?

  A. The line of best fit will not model the price well for a store with a large number of competitors.

  B. A convenience store with 17 competitors can no longer sell four-packs of AA batteries.

  C. A convenience store with 17 competitors cannot decrease its price any further.

  D. A convenience store cannot have more than 17 competitors.

62. Total Home Runs for Selected Years, 1903—2013
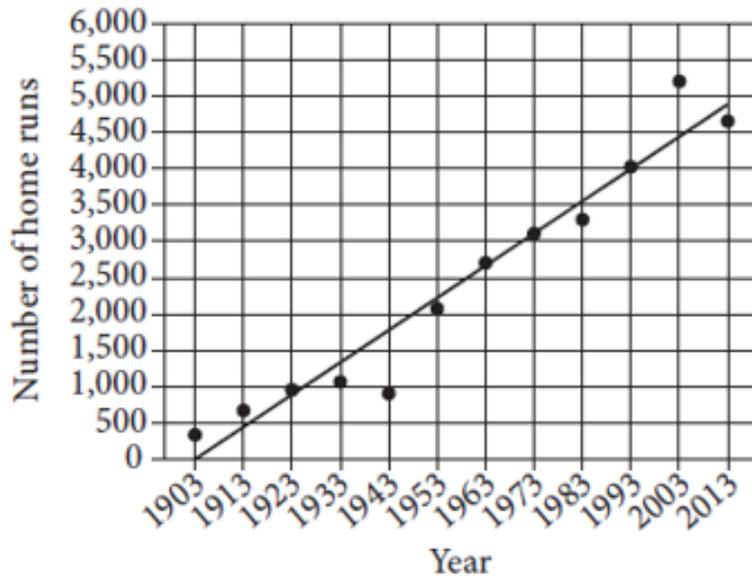
The scatterplot above shows the total number of home runs hit in major league baseball, in ten-year intervals, for selected years. The line of best fit for the data is also shown. Which of the following is closest to the difference between the actual number of home runs and the number predicted by the line of best fit in 2003?

A. 250
B. 500
C. 750
D. 850

Explanation

63. Future Value of an Investment after 20 Years for Different Interest Rates
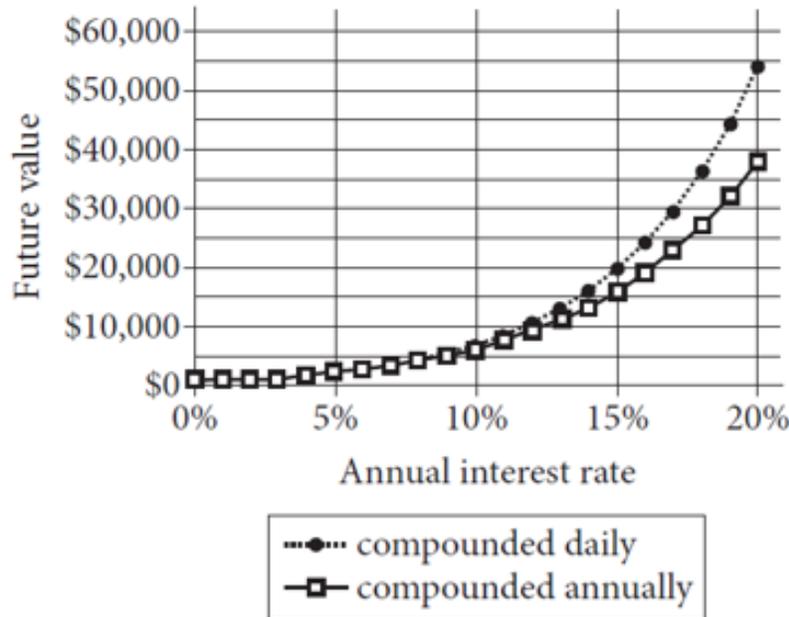
An initial investment of $1,000 is made at a constant annual interest rate. The graphs above show the corresponding future value v, in dollars, of the investment for different annual interest rates, r, after 20 years. One graph shows the value when the interest is compounded daily, and the other graph shows the value when the interest is compounded annually. Which of the following statements is true?

A. As r increases at a constant rate, v increases more rapidly if interest is compounded annually rather than daily.

B. As r increases at a constant rate, v increases more rapidly if interest is compounded daily rather than annually.

C. As r increases at a constant rate, the difference in interest compounded daily and interest compounded annually increases at a constant rate.

D. If r = 15% and interest is compounded annually, a $1,000 investment will be worth $20,000 after 20 years.

Explanation

64.
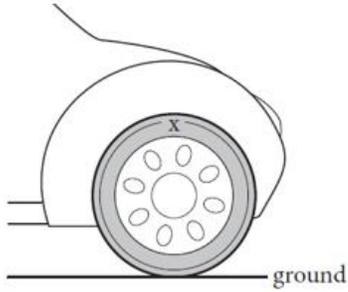
ground

In the figure above, X is a mark on the side of a tire of a car at rest. The car, starting from rest, will experience an acceleration for some period of time. Which of the following graphs could represent the distance between the mark X and the ground after the car starts to accelerate and the tire makes its first few revolutions?

A.

B.

C.

D.
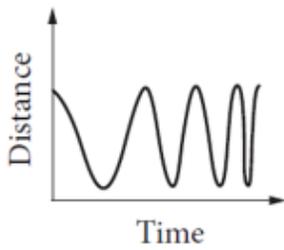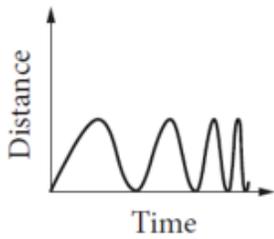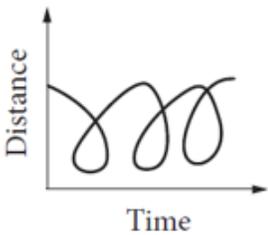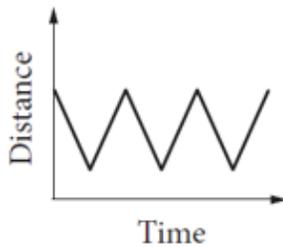
65.
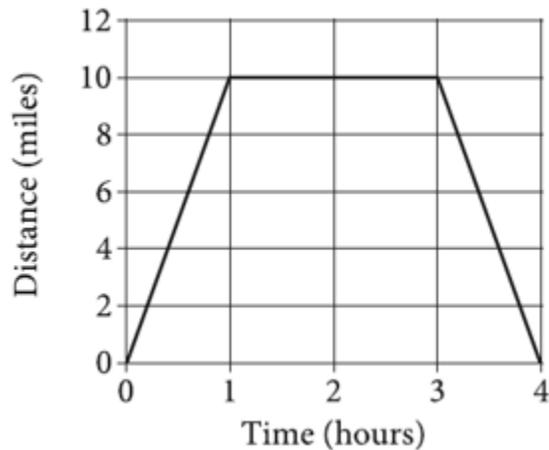
Coraline biked on a straight bike path. The graph shows her distance from the start of the path as a function of time. Which of the following best describes Coraline's bike ride?

A. A) She biked away from the start of the path at a constant speed for 1 hour, took a 2-hour break, then biked back to the start of the path at a constant speed for 1 hour.
B. B) She biked away from the start of the path at a constant speed for 1 hour, took a 2-hour break, then continued to bike away from the start of the path at a constant speed for 1 hour.
C. C) She biked away from the start of the path at an increasing speed for 1 hour, took a 2-hour break, then biked back to the start of the path at a decreasing speed for 1 hour.
D. D) She biked away from the start of the path at an increasing speed for 1 hour, biked at a constant speed for 2 hours, then biked back to the start of the path at a decreasing speed for 1 hour.

Explanation

PROBABILITY AND CONDITIONAL PROBABILITY

66. The probability of an unfair coin landing heads side up is 0.6. A student tossed this coin into the air 9 times. It landed tails side up 5 times and heads side up 4 times. What is the probability that the coin will land heads side up on the 10th toss?

    A. 0.4
    B. 0.5
    C. 0.6
    D. 1

<div align="right">

Explanation

</div>

67. In a survey of 240 television viewers, $\frac{3}{5}$ indicated that they like comedies, some indicated that they do not like comedies, and the rest did not respond. If one of the 240 viewers is selected at random, the probability is $\frac{1}{15}$ that the viewer selected did not respond. How many of the 240 viewers indicated that they do not like comedies?

<div align="right">

Explanation

</div>

68.

	One-digit	Two-digit	Total
Odd	3	13	16
Even	4	17	21
Total	7	30	37

A set of 37 positive integers is classified by the number of digits each integer has and whether the integer is odd or even. The table shows the counts for each category. One of the integers will be selected at random. What is the probability that the selected integer will be even, given that a two-digit integer is selected?

A. $\frac{17}{21}$

B. $\frac{21}{37}$

C. $\frac{17}{30}$

D. $\frac{17}{37}$

Explanation

69. Advertising during a Three-Hour Television Program

Type of advertisement	Length of advertisement (seconds)			
	15	30	60	Total
Food or beverage	0	34	9	43
Television show or movie	4	22	6	32
Vehicle	0	8	10	18
Other	6	1	0	7
Total	10	65	25	100

The table above shows the total number of television advertisements that appeared during a 3-hour television program, by type and length of advertisement.

If a food or beverage advertisement that appeared during the 3-hour television program is chosen at random, what is the probability that the length of the advertisement is 60 seconds?

A. $\frac{9}{25}$

B. $\frac{9}{43}$

C. $\frac{9}{100}$

D. $\frac{25}{100}$

70.

	Female	Male	Total
Blue eyes	2	4	6
Brown eyes	8	6	14
Green eyes	1	5	6
Total	11	15	26

Sierra recorded the gender and eye color of all the students in her biology class. The results are shown in the table above. If a male student is selected at random from Sierra's biology class, what is the probability that he will have brown eyes?

A. $\frac{2}{3}$

B. $\frac{2}{5}$

C. $\frac{3}{7}$

D. $\frac{3}{13}$

INFERENCE FROM SAMPLE STATISTICS AND MARGIN OF ERROR

71. To determine whether residents of a community would vote in favor of a ballot proposal to use $100,000 of local taxes for additional playground equipment at a community park, Jennifer surveyed 60 adults visiting the park with their children during one week in June. She found that 45 of those surveyed reported that they would vote in favor of the proposal. Which of the following statements must be true?

    A. When the actual vote is taken, 75 percent of the votes will be in favor of the proposal.
    B. No prediction should be made about the vote on the proposal because the sample size is too small.
    C. The sampling method is flawed and may produce biased results.
    D. The sampling method is not flawed and is likely to produce unbiased results.

<div align="right">Explanation</div>

72. One hundred park-district members will be selected to participate in a survey about selecting a new park-district coordinator. Which of the following methods of choosing the 100 members would result in a random sample of members of the park district?

    A. Obtain a numbered list of all park-district members. Use a random number generator to select 100 members from the list. Give the survey to those 100 members.

    B. Obtain a list of all park-district members sorted alphabetically. Give the survey to the first 100 members on the list.

    C. Tell all park-district members that volunteers are needed to take the survey. Give the survey to the first 100 members who volunteer.

    D. Obtain a list of all park-district members who are attending an upcoming event. Give the survey to the first 100 members on the list.

<div align="right">Explanation</div>

73. An ecologist selected a random sample of 30 prairie dogs from a colony and found that the mean mass of the prairie dogs in the sample was 0.94 kilograms (kg) with an associated margin of error of 0.12 kg. Which of the following is the best interpretation of the ecologist's findings?

    A. All prairie dogs in the sample have a mass between 0.82 kg and 1.06 kg.

    B. Most prairie dogs in the colony have a mass between 0.82 kg and 1.06 kg.

    C. Any mass between 0.82 kg and 1.06 kg is a plausible value for the mean mass of the prairie dogs in the sample.

    D. Any mass between 0.82 kg and 1.06 kg is a plausible value for the mean mass of the prairie dogs in the colony.

<div align="right">Explanation</div>

74. A city with 120,000 residents is voting on a proposal that would eliminate overnight parking of vehicles on the city's streets. An independent company randomly surveys 1,200 residents to see whether or not residents would support this proposal. The outcome of the survey shows that 60% of the residents surveyed approve of the proposal with a margin of error of 2%. Which of the following statements is a plausible conclusion from the outcome of the survey?

    A. Exactly 60% of city residents approve eliminating overnight parking.

    B. There are 72,000 city residents who approve eliminating overnight parking.

    C. About 2% of the city residents do not approve eliminating overnight parking.

    D. Between 58% and 62% of the city residents approve eliminating overnight parking.

<div align="right">Explanation</div>

75. Each person in a random sample of 150 city residents was asked if he or she favored the building of a new stadium in their city. Of the residents surveyed, 34% were in favor of building a new stadium. If the margin of error associated with the survey results is 8 percentage points, which of the following is most plausible?

    A. About 8% of all of the city residents surveyed did not tell the truth.
    B. About 25% of all of the city residents surveyed were in favor of building a new stadium.
    C. About 39% of all of the city residents surveyed were in favor of building a new stadium.
    D. About 43% of all of the city residents surveyed were in favor of building a new stadium.

EVALUATING STATISTICAL CLAIMS:
OBSERVATIONAL STUDIES AND EXPERIMENTS

76. A scientist conducted an experiment and selected a random sample of runners from a list of all high school track participants from a certain city. The scientist randomly assigned each runner to one of two treatment groups, and the results of the experiment were found to be statistically significant. To which of the following populations can the results of the experiment be safely generalized?

    A. All high school athletes
    B. All high school track participants from the city
    C. All high school track participants from the country
    D. All runners

77. Researchers conducted a study concerning the amount of sleep high school soccer players get. A total of 60 high school soccer players were randomly selected from all high school soccer players in a large school district. The table below shows the ages of the 33 female and 27 male participants.

Age	Number of participants
15	16
16	12
17	18
18	14
Total	60

If the results of the study suggest a relationship between age and the amount of sleep high school soccer players get, which of the following aspects of the study will prevent the results from being generalized to all high school students?

A. The participants are not all from the same high school.

B. The number of soccer players who participated is too small.

C. The number of female participants is not equal to the number of male participants.

D. Not every high school student could have been selected as a participant in the study.

Explanation

78. A polling agency recently surveyed 1,000 adults who were selected at random from a large city and asked each of the adults, "Are you satisfied with the quality of air in the city?" Of those surveyed, 78 percent responded that they were satisfied with the quality of air in the city. Based on the results of the survey, which of the following statements must be true?

   I.   Of all adults in the city, 78 percent are satisfied with the quality of air in the city.

   II.   If another 1,000 adults selected at random from the city were surveyed, 78 percent of them would report they are satisfied with the quality of air in the city.

   III.   If 1,000 adults selected at random from a different city were surveyed, 78 percent of them would report they are satisfied with the quality of air in the city.

   A. None
   B. II only
   C. I and II only
   D. I and III only

Explanation

79. A researcher conducted a survey to determine whether people in a certain large town prefer watching sports on television to attending the sporting event. The researcher asked 117 people who visited a local restaurant on a Saturday, and 7 people refused to respond. Which of the following factors makes it least likely that a reliable conclusion can be drawn about the sports-watching preferences of all people in the town?

   A. Sample size
   B. Population size
   C. The number of people who refused to respond
   D. Where the survey was given

Explanation

80. In order to determine if treatment X is successful in improving eyesight, a research study was conducted. From a large population of people with poor eyesight, 300 participants were selected at random. Half of the participants were randomly assigned to receive treatment X, and the other half did not receive treatment X. The resulting data showed that participants who received treatment X had significantly improved eyesight as compared to those who did not receive treatment X. Based on the design and results of the study, which of the following is an appropriate conclusion?

    A. Treatment X is likely to improve the eyesight of people who have poor eyesight.
    B. Treatment X improves eyesight better than all other available treatments.
    C. Treatment X will improve the eyesight of anyone who takes it.
    D. Treatment X will cause a substantial improvement in eyesight.

AREA AND VOLUME

81. Two beach balls are each in the shape of a sphere. The larger beach ball has a diameter of 3*x*, and the smaller beach ball has a diameter of *x*. What is the ratio of the volume of the larger beach ball to the volume of the smaller beach ball?

    A. 3 to 1
    B. 6 to 1
    C. 9 to 1
    D. 27 to 1

82.
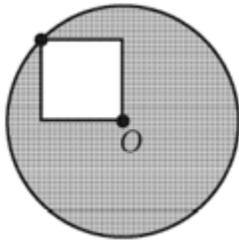
In the figure shown, point *O* is the center of the circle. One vertex of the square lies on the circle, and the opposite vertex is point *O*. If the area of the shaded region is $36\pi - 18$, what is the perimeter of the square?

    A. 24
    B. 72
    C. $12\sqrt{2}$
    D. $36\sqrt{2}$

83. The length of a rectangle is *x* inches, and the width of the rectangle is 8 inches less than the length. The area of the rectangle is 48 square inches. What is the value of *x*?

    A. 6
    B. 8
    C. 12
    D. 16

84.
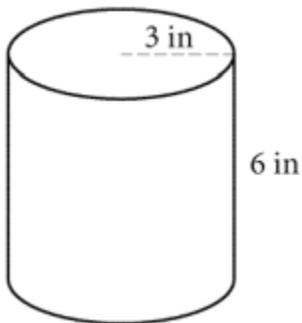
The right circular cylinder shown has a radius of 3 inches and a height of 6 inches. The volume of the cylinder is *x*π cubic inches. What is the value of *x*?

85. A concrete block had a portion removed from its center. Both the block and the portion removed are in the shape of a right rectangular prism, as shown in the figure. The dimensions of the portion of concrete removed are 2 centimeters (cm) by 5 cm by 5 cm. What is the volume, in cubic centimeters, of the concrete remaining in the block after the portion was removed?
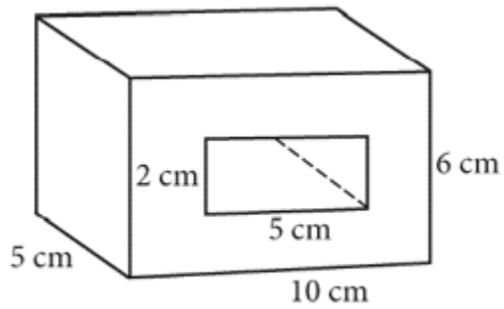
LINES, ANGLES, AND TRIANGLES

86.
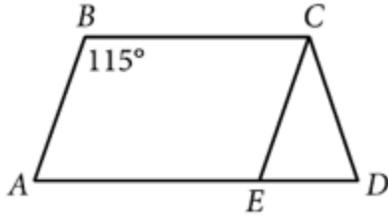
In the figure above, _BC_ and _AD_ are parallel, _AB_ and _EC_ are parallel, _CD_ = _CE_, and the measure of ∠ABC is 115°. What is the measure of ∠BCD?

    A. 85°
    B. 115°
    C. 125°
    D. 140°

Explanation

87.
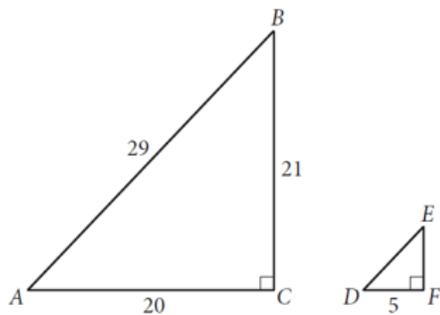
Triangles ABC and DEF above are similar. How much longer than segment EF is segment DE?

    A. 1
    B. 2
    C. 4
    D. 8

Explanation

88.
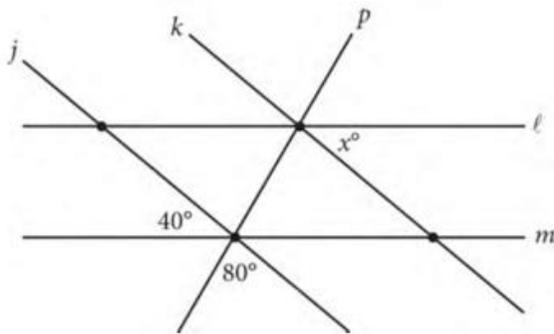
In the figure shown, line j is parallel to line k and line l is parallel to line m. What is the value of x?

    A. 40
    B. 60
    C. 80
    D. 100

Explanation

89.
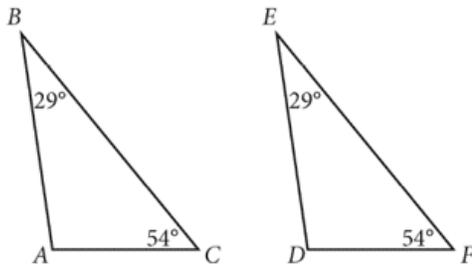
Triangle ABC and Triangle DEF each have an angle measuring 29° and an angle measuring 54°, as shown above. Which of the following statements is sufficient to prove triangle ABC is congruent to triangle DEF?

    A. The length of $\underline{EF}$ is 10.
    B. The measure of ∠EDF is 97°.
    C. The length of $\underline{BC}$ is equal to the length of $\underline{EF}$.
    D. The measure of ∠BAC is equal to the measure of ∠EDF.

Explanation

90.
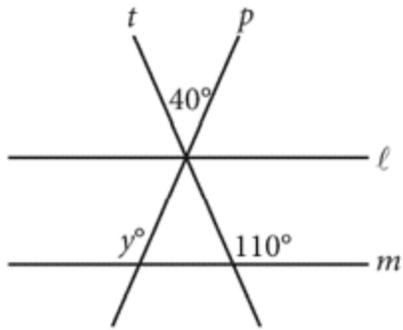
In the figure shown, line *l* is parallel to line *m*. What is the value of *y*?

    A. 100
    B. 110
    C. 120
    D. 150

RIGHT TRIANGLES AND TRIGONOMETRY

91.
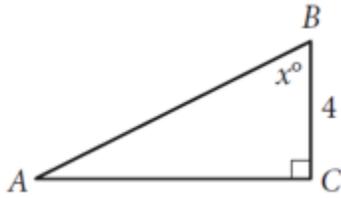
In the right triangle above, x = 60. What is the length of side $\underline{AB}$?

    A. 7

    B. 8

    C. 9

    D. It cannot be determined from the information given.

<div align="right">

[Explanation]

</div>

92.
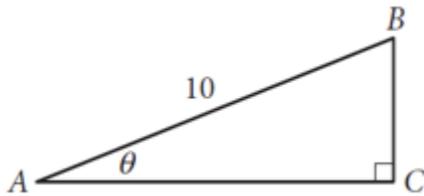
In the right triangle above, sin θ = $\frac{2}{5}$. If $AC = \sqrt{n}$, What is the value of n?

<div align="right">

[Explanation]

</div>

93.
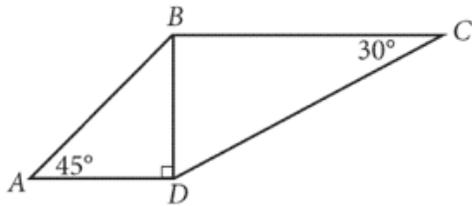
In the figure above, AD = 100 and segment AD is parallel to segment BC. Of the following, which best approximates the perimeter of quadrilateral ABCD?

    A. 400
    B. 483
    C. 528
    D. 614

94.
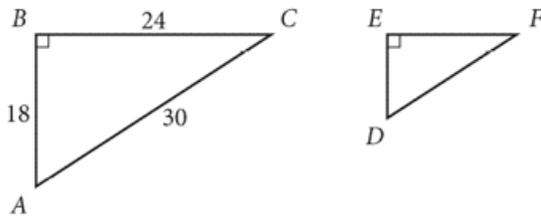
Triangle ABC is similar to triangle DEF, where ∠A corresponds to ∠D. What is the value of cos F?

95.
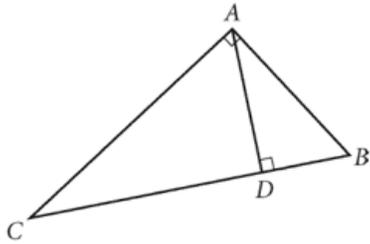
In the figure, _AD_ and _CB_ intersect at point _D_, _AD_ = 8, and _BD_ = 6. What is the value of tan C?

CIRCLES

96.
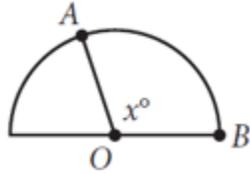
Segments <u>OA</u> and <u>OB</u> are radii of the semicircle above. Arc $\widehat{AB}$ has length 3π and OA = 5. What is the value of x?

97.
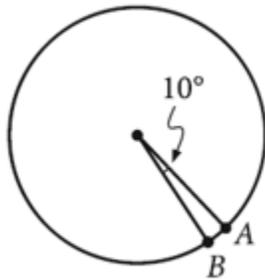
The circle shown has a circumference of 72π. The length of minor arc $\widehat{AB}$ is $x\pi$. What is the value of x?

98. $x^2 - 10x + y^2 + 6y = 2$

The graph in the *xy* - plane of the equation above is a circle. What are the coordinates of the center of the circle?

99.
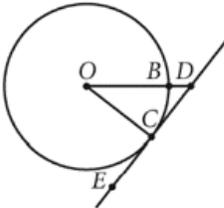
Point *O* is the center of the circle shown. Line segment ED is tangent to the circle at point *C*, and the measure of minor arc $\overarc{BC}$ is 40°. What is the measure of ∠CDO?

    A) 20°
    B) 40°
    C) 50°
    D) 90°

100.
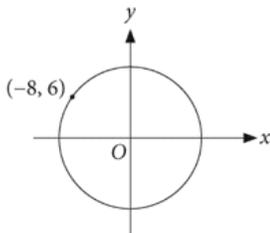
In the *xy* - plane above, the circle has its center at the origin and point (-8, 6) lies on the circle. What is the circumference of the circle?

    A) 12π
    B) 16π
    C) 20π
    D) 25π

04

PART THREE:

HIT EM' WITH YOUR BEST STUFF (PRACTICING & REVIEWING FOR THE DIGITAL SAT TEST)

➔ Chapter 8: Get a Leg Up on the SAT with Genuine Practice Questions (ENGLISH)

STANDARD ENGLISH CONVENTIONS

1. Three of our team's best players were injured at the beginning of the tournament, our team has not been doing well.

Which choice completes the text so that it conforms to the convention of standard English?

A. tournament, our
B. tournament, therefore, our
C. tournament, so our
D. tournament; our

2. Before starting a new job in the field of marketing it would be wise to take a crash course in the basic fundamentals of marketing.

Which choice completes the text so that it conforms to the convention of standard English?

A.basic fundamentals of
B. building blocks constituting
C.basics of
D. essential principles of

3. Despite being cheap, versatile, and easy to produce, _____ they are made from non-renewable petroleum, and most do not biodegrade in landfills.

Which choice completes the text so that it conforms to the conventions of Standard English?

A. there are two problems associated with commercial plastics:
B. two problems are associated with commercial plastics:
C. commercial plastics' two associated problems are that
D. commercial plastics have two associated problems:

4. While some dieticians recommend a high carbohydrate diet and low fat to shed pounds, <u>others advocating</u> a high protein and low carbohydrate as the best method to lose weight.

Which choice completes the text so that it conforms to the convention of standard English?

A. Others advocating
B. Others advocate
C. Others will advocate
D. Others are advocating

<div align="right">

[Explanation](#)

</div>

5. More than half of the world's <u>currently living plant</u> and animal species live in tropical rain forests. Four square miles of a Central American rainforest can be home to up to 1,500 different species of flowering plants, 700 species of trees, 400 species of birds, and 125 species of mammals.

Which choice completes the text so that it conforms to the convention of standard English?

A. Currently living plants
B. Living plant
C. Currently existing plant
D. Plant

<div align="right">

[Explanation](#)

</div>

6. Contrary to the theory that specific areas of the tongue <u>responds</u> to different tastes, scientists have now found that neurons in the brain are responsible for humans' perception of flavors.Which choice completes the text so that it conforms to the convention of standard English?

A. responds
B. respond
C. is responding
D. has responded

<div align="right">

[Explanation](#)

</div>

7. In this paragraph, taken from Mary W. Shelley's science fiction classic. Frankenstein, the narrator describes a being to whom she is growing increasingly attached.

Even broken in spirit as he is. no one can feel more

deeply than he does the beauties of nature. The

starry sky. the sea. and every sight afforded by these

wonderful regions seem still to have the power of

Line 5 elevating his soul from earth. Such a man has a double

existence: he may suffer misery and be overwhelmed by

disappointments. yet when he has retired into himself,

he will be like a celestial spirit that has a halo

around him. within whose circle no grief or folly ventures.

In line 7, "retired" most closely means

- A. fallen asleep
- B. abandoned his profession
- C. calmed down
- D. withdrawn
- E. passed away

Explanation

8. During the summer of 1998, I watched Yellowstone National Park go up in flames. In June, <u>fires ignited by lightning</u> had been allowed to bum unsuppressed because park officials expected that the usual summer rains would douse the flames.

Which choice completes the text so that it conforms to the convention of standard English?

    A. fires ignited by lightning
    B. fires having been ignited by lightning
    C. fires, the kind ignited by lightning,
    D. fires ignited and started by lightning

9. The following excerpt is adapted from Around the World in Eighty days by Jules Verne.

Phileas Fogg, having shut the door of his house at half-past eleven, and having put his right foot before his left five hundred and seventy-five times, and his left foot before his right five hundred and seventy-six times reached the Reform club. He <u>repaired</u> at once to the dining room and took his place at the habitual table, cover of which had already been laid for him.

Which choice completes the text so that it conforms to the convention of standard English?

The word "repaired" most nearly means

    A. Fixed
    B. Returned
    C. Stormed
    D. Proceeded

10. Before the Plague hit Europe in the 14th century, medieval people did not bathe <u>submerging</u> themselves in a tub of water, which they considered an act of debauchery. Instead, they quickly cleaned themselves with water and a cloth.

Which choice completes the text so that it conforms to the convention of standard English?

    A. Submerging
    B. Drowning
    C. Engulfing
    D. Sheathing

<div align="right"><a>Explanation</div>

11. Organisms have evolved a number of surprising adaptations to ensure their survival in adverse conditions. Tadpole shrimp (Triops longicaudatus) embryos, _____ can pause development for over ten years during extended periods of drought.
Which choice completes the text with the most logical transition?

    A. in contrast,
    B. for example,
    C. meanwhile,
    D. consequently,

<div align="right"><a>Explanation</div>

12. A recent study indicates that more and more college graduates are opting <u>to rent homes or apartments instead of</u> to buy real estate- a trend fueled by rising market costs and new spending habits.

Which choice completes the text so that it conforms to the convention of standard English?

    A. to rent homes or apartments instead of
    B. to rent homes or apartments rather than
    C. to rent homes or apartments opposed to
    D. renting homes or apartments instead of

<div align="right"><a>Explanation</div>

13. As a result of competitive reality television shows such as American idol, <u>many aspiring rock stars that would never have had the means to pursue their dreams</u> now have become major celebrities.

Which choice completes the text so that it conforms to the convention of standard English?

    A. Many aspiring rock stars that would never have had the means to do their dream
    B. Many aspiring rock stars which would never have means to pursue their dream
    C. Many aspiring rock stars whom would never have had the way to pursue
    D. Many aspiring rock stars who would never have had the means to pursue their dreams.

<div align="right">

[Explanation](#)

</div>

14. The author's claim about the relationship between Neanderthals and Homo sapiens is _____, as it fails to account for several recent archaeological discoveries. To be convincing, his argument would need to address recent finds of additional hominid fossils, such as the latest Denisovan specimens and Homo longi.

Which choice completes the text with the most logical and precise word or phrase?

    A. disorienting
    B. tenuous
    C. nuanced
    D. unoriginal

<div align="right">

[Explanation](#)

</div>

15. Like other amphibians, the wood frog (Rana sylvatica) is unable to generate its own heat, so during periods of subfreezing temperatures, it _____ by producing large amounts of glucose, a sugar that helps prevent damaging ice from forming inside its cells.

Which choice completes the text so that it conforms to the conventions of Standard English?

     A. had survived
     B. survived
     C. would survive
     D. survives

<div align="right">

[Explanation]

</div>

16. After a spate of illnesses as a child, Wilma Rudolph was told she might never walk again. Defying all odds, Rudolph didn't just walk, she _____ the 1960 Summer Olympics in Rome, she won both the 100- and 200-meter dashes and clinched first place for her team in the 4 x 100-meter relay, becoming the first US woman to win three gold medals in a single Olympics.

Which choice completes the text so that it conforms to the conventions of Standard English?

     A. ran —fast—during
     B. ran —fast during
     C. ran —fast, during
     D. ran —fast. During

<div align="right">

[Explanation]

</div>

17. Bengali author Toru Dutt's A Sheaf Gleaned in French Fields (1876), a volume of English translations of French poems, _____ scholars' understanding of the transnational and multilingual contexts in which Dutt lived and worked.

Which choice completes the text so that it conforms to the conventions of Standard English?

      A. has enhanced
      B. are enhancing
      C. have enhanced
      D. enhance

18. Journalists have dubbed Gil Scott-Heron the "godfather of rap," a title that has appeared in hundreds of articles about him since the 1990s. Scott- Heron himself resisted the godfather _____ feeling that it didn't encapsulate his devotion to the broader African American blues music tradition as well as "bluesologist," the moniker he preferred.

Which choice completes the text so that it conforms to the conventions of Standard English?

      A. nickname, however
      B. nickname, however;
      C. nickname, however,
      D. nickname; however,

19. Materials scientist Marie-Agathe Charpagne and her colleagues believed they could improve on the multicomponent alloy NiCoCr, an equal-proportions mixture of nickel (Ni), cobalt (Co), and chromium (Cr), by replacing chromium with ruthenium _____ the alloy that resulted, NiCoRu, turned out to be an unsuitable replacement for NiCoCr.

Which choice completes the text so that it conforms to the conventions of Standard English?

     A. (Ru)
     B. (Ru) but
     C. (Ru),
     D. (Ru), but

<div align="right">

[Explanation]

</div>

20. Allergens, pollution, bacteria, and sunlight—these are just some of the foreign objects that _____

Which choice completes the text so that it conforms to the conventions of Standard English?

     A. on a basis that is daily are attacking the human body.
     B. attacking the bodies of humans on a daily basis.
     C. attack the human body on a daily basis.
     D. attacks humans each and every day.

<div align="right">

[Explanation]

</div>

21. Reading also stimulates the _____ consider what it would have been like to be at some historical event, or to form a picture of what one could accomplish in life.

Which choice completes the text so that it conforms to the conventions of Standard English?

    A. imagination to identify with a hero in a story, to
    B. imagination: to identify with a hero in a story, to
    C. imagination; to identify with a hero in a story, to
    D. imagination, to identify with a hero in a story to

22. In 1943, in the midst of World War II, mathematics professor Grace Hopper was recruited by the US military to help the war effort by solving complex equations. Hopper's subsequent career would involve more than just _____ as a pioneering computer programmer, Hopper would help usher in the digital age.

Which choice completes the text so that it conforms to the conventions of Standard English?

    A. equations, though:
    B. equations, though,
    C. equations. Though,
    D. equations though

23. Not long after the Pinkertons surrendered, Pennsylvania governor Robert Pattison authorized the militia to advance and placed the town of Homestead under martial law. In the days that followed, steel production at the plant resumed, with strikebreakers living on the _____ too dangerous for them to cross the picket.

Which choice completes the text so that it conforms to the conventions of Standard English?

      A. mills grounds: it was still
      B. mills' grounds—it was still
      C. mill's grounds, it was still
      D. mill's grounds; it was still

<div align="right">

[Explanation](#)

</div>

24. Etched into Peru's Nazca Desert are line drawings so large that they can only be fully seen from high above. Archaeologists have known of the lines since the 1920s, when a researcher spotted some from a nearby foothill, and they have been studying the markings ever since. _____ archaeologists' efforts are aided by drones that capture high-resolution aerial photographs of the lines.

Which choice completes the text with the most logical transition?

      A. Currently,
      B. In comparison,
      C. Still,
      D. However,

<div align="right">

[Explanation](#)

</div>

25. Inventor John Friedman created a prototype of the first flexible straw by inserting a screw into a paper straw and, using dental floss, binding the straw tightly around the _____ When the floss and screw were removed, the resulting corrugations in the paper allowed the straw to bend easily over the edge of a glass.
Which choice completes the text so that it conforms to the conventions of Standard English?

A. screw's threads.
B. screws' threads.
C. screw's threads.
D. screws threads'.

26. The forty-seven geothermal springs of Arkansas' Hot Springs National Park are sourced via a process known as natural groundwater recharge, in which rainwater percolates downward through the earth—in this case, the porous rocks of the hills around Hot _____ collect in a subterranean basin.

Which choice completes the text so that it conforms to the conventions of Standard English?

A. Springs to
B. Springs: to
C. Springs—to
D. Springs, to

27. Beatrix Potter is perhaps best known for writing and illustrating children's books such as The Tale of Peter Rabbit (1902), but she also dedicated herself to mycology, the study of _____ more than 350 paintings of the fungal species she observed in nature and submitting her research on spore germination to the Linnean Society of London.

Which choice completes the text so that it conforms to the conventions of Standard English?

A. fungi; producing
B. fungi. Producing
C. fungi producing
D. fungi, producing

INFORMATION AND IDEAS

28. The term free *rider* originates from the idea of someone who rides public transportation without paying the fare. The *free rider problem* is what results when too many people do this: the transit system will go bankrupt. More broadly, the *free rider* is someone who uses or enjoys the benefits of something without paying, or takes more than his or her share of a public 5 good. Free *riders* can cause others to curtail their own contributions, not wanting to be taken advantage of.

In some cases, the *free rider problem* is viewed as a necessary cost of government. When citizens pay for national defense or environmental protection, everyone benefits, even those who evade paying taxes.

The author of the passage would be most likely to agree with which of the following statements?

 A. *Free riders* cannot be blamed for their actions, because they are an inevitable part of any government.
 B. *Free rider problems* are not worth worrying about, because they are an inevitable part of any government.
 C. There are at least some situations in which the *free rider problem* should not be viewed as an inevitable part of government.
 D. National defense is a perfect example of *why free rider problems* need to be stamped out as quickly as possible.

<div align="right">

[Explanation](#)

</div>

29. Which of the following most logically completes the passage?

Most bicycle helmets provide good protection for the top and back of the head, but little or no protection for the temple regions on the sides of the head. A study of head injuries resulting from bicycle accidents showed that a large proportion were caused by blows to the temple area. Therefore, if bicycle helmets protected this area, the risk of serious head injury in bicycle accidents would be greatly reduced, especially since _____.

A. among the bicyclists included in the study's sample of head injuries, only a very small proportion had been wearing a helmet at the time of their accident
B. even those bicyclists who regularly wear helmets have a poor understanding of the degree and kind of protection that helmets afford
C. a helmet that included protection for the temples would have to be somewhat larger and heavier than current helmets
D. the bone in the temple area is relatively thin and impacts in that area are thus very likely to cause brain injury

Explanation

30. The following text is from Charlotte Bronte's 1847 novel *Jane Eyre.* Jane works as a governess at Thornfield Hall.

I went on with my day's business tranquilly·; but ever and anon vague suggestions kept wandering across my brain of reasons why I should quit Thornfield; and I kept involuntarily framing advertisements and pondering conjectures about new situations: these thoughts I did not think to check; they might germinate and bear fruit if they could.

 Which choice best states the main purpose of the text?

A. To convey a contrast between Jane's outward calmness and internal restlessness
B. To emphasize Jane's loyalty to the people she works for at Thornfield Hall
C. To demonstrate that Jane finds her situation both challenging and deeply fulfilling
D. To describe Jane's determination to secure employment outside of Thornfield Hall

Explanation

31. Text 1

Many historians find that general trends tend to repeat themselves if you look far enough back through the records of humanity. It truly can be said that there is nothing new under the sun. Perhaps this is simply a function of how long humans have been around, but perhaps it also says something about just how similar all humans are, even across thousands of years.

Text 2

Studying fashion history is a lot like listening to remixes of your favourite songs. As you examine textiles from around the world and through time, you'll constantly see that most "new" fashions are just old ideas remade. And so, women's high-waisted shirts from the early 2000s weren't anything new or different: they were simply 18th-century empire-style gowns remixed for a new generation.

What best describes the relationship between the two texts?

A. Text 2 provides a specific example to illustrate the broad claim made in Text 1.
B. Text 2 presents arguments that are generally opposed to the primary position made in Text 1.
C. Text 1 emphasizes a modem approach to the study of history, whereas Text 2 is more antiquated.
D. Text 1 addresses the major objection to the study of history that is raised by Text 2.

Explanation

32. Herbivorous sauropod dinosaurs could grow more than 100 feet long and weigh up to 80 tons, and some researchers have attributed the evolution of sauropods to such massive sizes to increased plant production resulting from high levels of atmospheric carbon dioxide during the Mesozoic era. However, there is no evidence of significant spikes in carbon dioxide levels coinciding with relevant periods in sauropod evolution, such as when the first large sauropods appeared, when several sauropod lineages underwent further evolution toward gigantism, or when sauropods reached their maximum known sizes, suggesting that _____

Which choice most logically completes the text?

A. fluctuations in atmospheric carbon dioxide affected different sauropod lineages differently.
B. the evolution of larger body sizes in sauropods did not depend on increased atmospheric carbon dioxide.
C. atmospheric carbon dioxide was higher when the largest known sauropods lived than it was when the first sauropods appeared.
D. sauropods probably would not have evolved to such immense sizes if atmospheric carbon dioxide had been even slightly higher.

Explanation

33. <u>Student admissions to college are not accepted solely based on their SAT scores;</u> other considerations include their grade point averages and extracurricular activities.

Which choice completes the text with the most logical information?

A. Student admissions to college are not accepted solely based on their SAT scores
B. Students seeking admission to college are not accepted solely based on their SAT scores
C. Student admissions to college are not accepted solely based on the school score
D. Students' admissions to college are not accepted based on scores solely

Explanation

34. Juvenile Plants Found Growing on Bare Ground and in Patches of Vegetation for Five Species

Species	Bare ground	Patches of vegetation	Total	Percent found in patches of vegetation
T. moroderi	9	13	22	59.1%
T. libanitis	83	120	203	59.1%
H. syriacim	95	106	201	52.7%
H. squamatum	218	321	539	59.6%
H. stoechas	11	12	23	52.2%

Alicia Montesinos-Navarro, Isabelle Storer, and Rocio Perez-Barrales recently examined several plots within a diverse plant community in southeast Spain. The researchers calculated that if individual plants were randomly distributed on this particular landscape, only about 15% would be with other plants in patches of vegetation. They counted the number of juvenile plants of five species growing in patches of vegetation and the number growing alone on bare ground and compared those numbers to what would be expected if the plants were randomly distributed. Based on these results, they claim that plants of these species that grow in close proximity to other plants gain an advantage at an early developmental stage.

Which choice best describes data from the table that support the researchers' claim?

A. For all five species, less than 75% of juvenile plants were growing in patches of vegetation.
B. The species with the greatest number of juvenile plants growing in patches of vegetation was *H. stoechas.*
C. For *T. libanitis* and *T. moroderi*, the percentage of juvenile plants growing in patches of vegetation was less than what would be expected if plants were randomly distributed.
D. For each species, the percentage of juvenile plants growing in patches of vegetation was substantially higher than what would be expected if plants were randomly distributed.

Explanation

35. Percentage of Ondo State Small - Scale Farmers Who Are Female, by Main Crop Grown
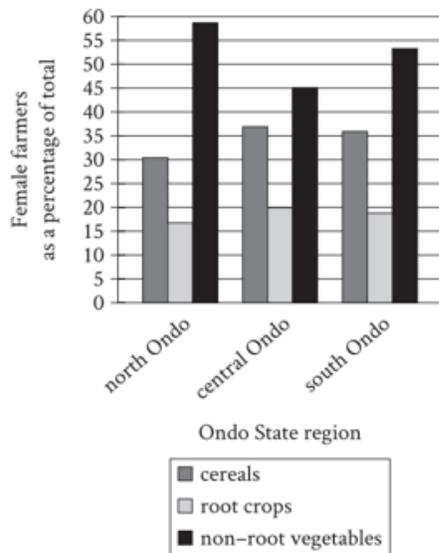
Geographer Adebayo Oluwole Eludoyin and his colleagues surveyed small-scale farmers in three locations in Ondo State, Nigeria—which has mountainous terrain in the north, an urbanized center, and coastal terrain in the south—to learn more about their practices, like the types of crops they mainly cultivated. In some regions, female farmers were found to be especially prominent in the cultivation of specific types of crops and even constituted the majority of farmers who cultivated those crops; for instance, _____

Which choice most effectively uses data from the graph to complete the example?

    A. most of the farmers who mainly cultivated cereals and most of the farmers who mainly cultivated non-root vegetables in south Ondo were women.
    B. more women in central Ondo mainly cultivated root crops than mainly cultivated cereals.
    C. most of the farmers who mainly cultivated non-root vegetables in north and south Ondo were women.
    D. a relatively equal proportion of women across the three regions of Ondo mainly cultivated cereals.

[Explanation](#)

36. US States with the Greatest Number of Organic Farms in 2016

US States with the Greatest Number of
Organic Farms in 2016
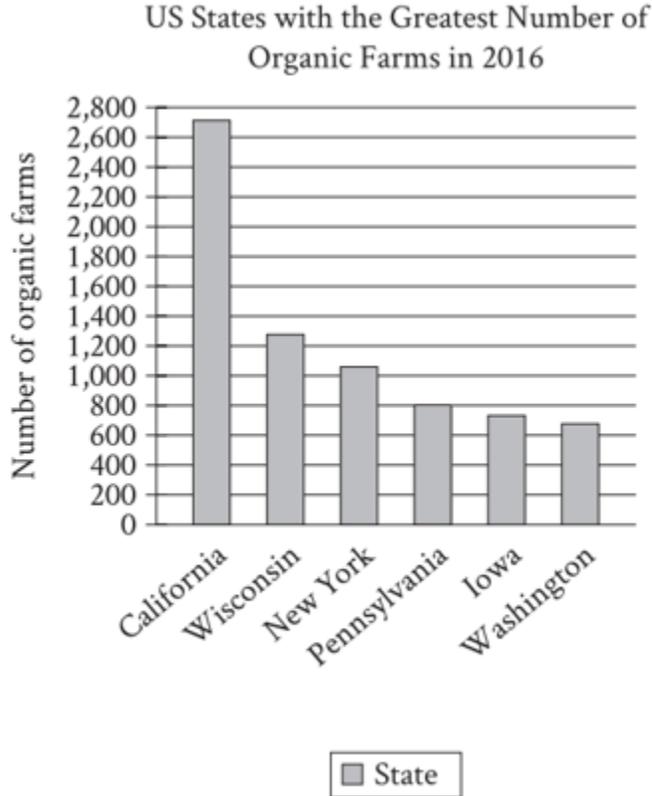
Organic farming is a method of growing food that tries to reduce environmental harm by using natural forms of pest control and avoiding fertilizers made with synthetic materials. Organic farms are still a small fraction of the total farms in the United States, but they have been becoming more popular. According to the US Department of Agriculture, in 2016 California had between 2,600 and 2,800 organic farms and _____

Which choice most effectively uses data from the graph to complete the text?

    A. Washington had between 600 and 800 organic farms.
    B. New York had fewer than 800 organic farms.
    C. Wisconsin and Iowa each had between 1,200 and 1,400 organic farms.
    D. Pennsylvania had more than 1,200 organic farms.

[Explanation](#)

37. Ablation Rates for Three Elements in Cosmic Dust, by Dust Source

Element	SPC	AST	HTC	OCC
iron	20%	28%	90%	98%
potassium	44%	74%	97%	100%
sodium	45%	75%	99%	100%

Earth's atmosphere is bombarded by cosmic dust originating from several sources: short-period comets (SPCs), particles from the asteroid belt (ASTs), Halley-type comets (HTCs), and Oort cloud comets (OCCs). Some of the dust's material vaporizes in the atmosphere in a process called ablation, and the faster the particles move, the higher the rate of ablation. Astrophysicist Juan Diego Carrillo-Sánchez led a team that calculated average ablation rates for elements in the dust (such as iron and potassium) and showed that material in slower- moving SPC or AST dust has a lower rate than the same material in faster-moving HTC or OCC dust. For example, whereas the average ablation rate for iron from AST dust is 28%, the average rate for _____

Which choice most effectively uses data from the table to complete the example?

    A. iron from SPC dust is 20%.
    B. sodium from OCC dust is 100%.
    C. iron from HTC dust is 90%.
    D. sodium from AST dust is 75%.

Explanation

38. Estimates of Tyrannosaurid Bite Force

Study	Year	Estimation method	Approximate bite force (newtons)
Cost et al.	2019	muscular and skeletal modeling	35,000-63,000
Gignac and Erickson	2017	tooth-bone interaction analysis	8,000-34,000
Meers	2002	Body-mass scaling	183,000-235,000
Bates and Falkingham	2012	muscular and skeletal modeling	35,000-57,000

The largest tyrannosaurids—the family of carnivorous dinosaurs that includes *Tarbosaurus, Albertosaurus*, and, most famously, *Tyrannosaurus rex*—are thought to have had the strongest bites of any land animals in Earth's history. Determining the bite force of extinct animals can be difficult, however, and paleontologists Paul Barrett and Emily Rayfield have suggested that an estimate of dinosaur bite force may be significantly influenced by the methodology used in generating that estimate.

Which choice best describes data from the table that support Barrett and Rayfield's suggestion?

    A. The study by Meers used body-mass scaling and produced the lowest estimated maximum bite force, while the study by Cost et al. used muscular and skeletal modeling and produced the highest estimated maximum.

    B. In their study, Gignac and Erickson used tooth-bone interaction analysis to produce an estimated bite force range with a minimum of 8,000 newtons and a maximum of 34,000 newtons.

    C. The bite force estimates produced by Bates and Falkingham and by Cost et al. were similar to each other, while the estimates produced by Meers and by Gignac and Erickson each differed substantially from any other estimate.

    D. The estimated maximum bite force produced by Cost et al. exceeded the estimated maximum produced by Bates and Falkingham, even though both groups of researchers used the same method to generate their estimates.

Explanation

39. Average Number and Duration of Torpor Bouts and Arousal Episodes for Alaska Marmots and Arctic Ground Squirrels, 2008—2011

Feature	Alaska marmots	Arctic ground squirrels
torpor bouts	12	10.5
duration per bout	13.81 days	16.77 days
arousal episodes	11	9.5
duration per episode	21.2 hours	14.2 hours

When hibernating, Alaska marmots and Arctic ground squirrels enter a state called torpor, which minimizes the energy their bodies need to function. Often a hibernating animal will temporarily come out of torpor (called an arousal episode) and its metabolic rate will rise, burning more of the precious energy the animal needs to survive the winter. Alaska marmots hibernate in groups and therefore burn less energy keeping warm during these episodes than they would if they were alone. A researcher hypothesized that because Arctic ground squirrels hibernate alone, they would likely exhibit longer bouts of torpor and shorter arousal episodes than Alaska marmots.

Which choice best describes data from the table that support the researcher's hypothesis?

A. The Alaska marmots' arousal episodes lasted for days, while the Arctic ground squirrels arousal episodes lasted less than a day.
B. The Alaska marmots and the Arctic ground squirrels both maintained torpor for several consecutive days per bout, on average.
C. The Alaska marmots had shorter torpor bouts and longer arousal episodes than the Arctic ground squirrels did.
D. The Alaska marmots had more torpor bouts than arousal episodes, but their arousal episodes were much shorter than their torpor bouts.

Explanation

40. The following diary entry was written on April 13, 1645.

1   Mr. Hopkins, the governor of Hartford upon Connecticut, came to
Boston, and brought his wife with him, (a godly young woman, and of
special parts,) who was fallen into a sad infirmity, the loss of her
understanding and reason, which had been growing on her diverse
years, by occasion of her giving herself wholly to reading and writing,
and had written many books. Her husband, being very

5   loving and tender of her, was loath to grieve her; but he saw his error,
when it was too late. For if she had attended to her household affairs,
and such things as belong to women, and not gone out of her way
and calling to meddle in such things as are proper for men, whose
minds are stronger, etc., she had kept her wits, and might have
improved them usefully and honorably. He brought her to Boston,
and left her with her brother, one Mr. Yale, a merchant, to try what
means might be had

10   here for her. But no help could be had.

The author of this passage is most likely

     A. strongly in favor of education for women
     B. advocating universal health care
     C. vehemently opposed to educating women
     D. against people marrying too young

EXPRESSION OF IDEAS

41. The stove and the oven remain to this day our most-used cooking technologies, and innovations in the field of heating elements have frequently ameliorated the mechanism without much change to the principal design. The commercialization of natural gas in late 19th century England eventually gave cooks the ability to precisely _____ their cooking flame, as well as the convenience of instantaneous ignition. To this day, gas ranges are preferred by many professional chefs.

Which choice completes the text with the most logical and precise word or phrase?

 A. Annihilate
 B. Satisfy
 C. Craft
 D. Manipulate

42. Since 1813 reaction to Jane Austen's novels has oscillated between _____ and condescension; but in general, later writers have esteemed her works more highly than did most of her literary contemporaries.
Which choice completes the text with the most logical and precise word or phrase?

A. dismissal
B. adoration
C. disapproval
D. indifference

43. It was her view that the country's problems had been _____ by foreign technocrats, so that to invite them to come back would be counterproductive.
Which choice completes the text with the most logical and precise word or phrase?

 A. foreseen
 B. attacked
 C. ascertained
 D. worsened

44. Experienced employers recognize that business students who can _____ different points of view are ultimately more effective as managers than are the brilliant and original students who adhere dogmatically to their own formulations.

Which choice completes the text with the most logical and precise word or phrase?

    A. discredit
    B. assimilate
    C. impose
    D. disregard

<div align="right">

[Explanation](#)

</div>

45. The significance of the Magna Carta lies not in its _____ provisions, but in its broader impact: it made the king subject to the law.

Which choice completes the text with the most logical and precise word or phrase?

A. specific
B. revolutionary
C. implicit
D. controversial

<div align="right">

[Explanation](#)

</div>

46. The evolution of intelligence among early large mammals of the grasslands was due in great measure to the interaction between two ecologically _____groups of these animals, the hunting carnivores, and the herbivores that they hunted. The interaction resulting from the differences between predator and prey led to a general improvement in brain functions; however, certain components of intelligence were improved far more than others.

Which choice completes the text with the most logical and precise word or phrase?

A. synchronized
B. diversified
C. antagonistic
D.   evolved

<div align="right">

[Explanation](#)

</div>

47. At a certain period in Earth's history, its atmosphere contained almost no oxygen, although plants were producing vast quantities of oxygen. As a way of _____these two facts, scientists have hypothesized that nearly all of the oxygen being produced was taken up by iron on Earth's surface. Clearly, however, this explanation is inadequate.

Which choice completes the text with the most logical and precise word or phrase?

    A. insulating
    B. reconciling
    C. suppressing
    D. contemplating

<div align="right"><a>Explanation</div>

48. Because they had expected the spacecraft Voyager 2 to be able to gather data only about the planets Jupiter and Saturn, scientists were _____by the wealth of information it sent back from Neptune twelve years after leaving Earth.

Which choice completes the text with the most logical and precise word or phrase?

    A. mystified
    B. elated
    C. disconsolate
    D. dispossessed

<div align="right"><a>Explanation</div>

49. Science advances in a/an _____ spiral in that each new conceptual scheme embraces the phenomena explained by its predecessors and adds to those explanations.

Which choice completes the text with the most logical and precise word or phrase?

    A. discontinuous
    B. reiterative
    C. widening
    D. anomalous

<div align="right"><a>Explanation</div>

50. Despite _____ technological innovations, including cell-phone cameras, pagers, hand-held computers, and a multitude of other devices intended to streamline and ease our hectic lives; life does not seem to be getting simpler.

Which choice completes the text with the most logical and precise word or phrase?

    A. myriad
    B. meager
    C. profound
    D. enigmatic

51. Instead of elucidating the complex process of wiring an eleven-room home for ceiling speakers and the Internet, Eliza paints an incomprehensible picture of a "smart home" and further _____ the intricacies of home-networking.

Which choice completes the text with the most logical and precise word or phrase?

    A. obfuscates
    B. expounds
    C. cites
    D. regenerates

52. Animals have a variety of ways of protecting themselves from enemies. Some animals adapt in shape and color to their environment. The tree frog, for example, Blends perfectly into its surroundings. When it sits motionless, <u>a background of leaves completely hides the tree frog.</u>

Which choice completes the text with the most logical and precise word or phrase?

    A. A background of leaves completely hides the tree frog
    B. The tree frog is completely hidden in a background of leaves
    C. Completely hidden is the tree frog in a background of leaves
    D. A background of leaves and the tree frog are completely hidden

53. This passage is adapted from Priit Vesilind, *The Singing Revolution*. © 2008 by Sky Films Incorporated.

By the end of 1939 Soviet troops had forced their way into garrisons in the Baltic states of Estonia, Latvia, and Lithuania. In 1940 the Soviets forcibly

Line   annexed the three Baltic states into the USSR. But in

5   1941 Hitler double-crossed Stalin: he launched an attack on the Soviet Union. The Baltic nations were caught in the middle of the treachery. In 1945, when the war ended, Estonia remained occupied by the Soviets.

After nearly 50 years of Soviet occupation, when agitations for independence came in the late 1980s, the protestors pointed back to the Molotov-Ribbentrop Pact, a secret non-aggression treaty between the Soviet Union and Nazi Germany. If the Kremlin were

15   to acknowledge the existence of this protocol, they reasoned, it would be admitting that the Baltic States had no legal "marriage" with Moscow, but that these nations were forcibly abducted with the collusion of the world's most heinous fascist regime. So the

20   occupied nations had every right to ask for their freedom, and with no need for a legal "divorce."

As used in line 18, "collusion" most nearly means

    A. conspiracy.
    B. impact.
    C. separation.
    D. danger.

54. The following passage describes how ranchers compensate for poor land quality.

  1 Eradicating tree cover sets the wheels of land degradation in motion. Shallow, acidic, and nutrient-poor, tropical soils rapidly lose critical phosphorus and other nutrients when the forest is converted to pasture. To compensate for the fertility decline, ranchers often stock newly cleared land at four times the standard rate of one cow per hectare, which accelerates erosion and the vegetative shift to

  5 annual weeds and shrubs. Stocking rates fall precipitously thereafter, and most pasture is abandoned for land newly carved from the forest.

As used in line 5, *precipitously* most nearly means

    A. prematurely
    B. early
    C. abruptly
    D. sadly

55.

(1) Samuel Morse patented the telegraph in 1842 on March 3, 1843, Morse was granted $30,000 from Congress to build a trial line between Baltimore and Washington. (2) From a social aspect, it is important to note that the telegraph played a major part in connecting the continent. (3) Together, the telegraph and the railroads reduced isolation and increased mobility, and speeded up life in the United States.
(4) The telegraph made it possible to synchronize clocks at distant train stations and make accurate schedules. (5) It also allowed stations to tell each other where each train was, and prevent accidents.
(6) Morse code can be considered the first modern information system. (7) It is a simple means of communicating messages with as few errors as possible, and even when errors occur, the message is still understandable.
(8) In fact, almost any sort of signal in patterns of three is considered a call for help. (9) Even though it's rarely used, Morse code still resonates symbolically in today's society. (10) Almost everyone knows the three-dot, three-dash, three-dot code for S.O.S., which is still widely used as a distress call.

Which of the following best replaces the word *It* in sentence 7?

    A. They
    B. Morse's dot-dash system
    C. The first modern information system
    D. Communication

[Explanation](#)

56.

1 The nation had few taxes in its early history. From 1791 to 1802, the United States government was supported by internal taxes on distilled spirits, carriages, refined sugar, tobacco, property sold at auction, corporate bonds, and slaves. The high costs of the War of 1812 brought about the nation's first sales tax on gold, silverware, jewelry,

5 and watches. In 1817, however, Congress expunged all internal taxes, relying on tariffs on imported goods to provide sufficient funds for running the government.

In 1862, in order to support the Civil War effort, Congress enacted the nation's first income tax law. It was a forerunner of our modern income tax in that it was based on the principles of graduated taxation and of withholding income at the source. During

10 the Civil War, a person earning from $600 to $10,000 per year paid tax at the rate of 3%. Those with incomes of more than $10,000 paid taxes at a higher rate. Additional sales and excise taxes were added, and an "inheritance" tax also made its debut. In 1866, internal revenue collections reached their highest point in the nation's 90-year-history—more than $310 million, an amount not reached again until around 1911.

Which best captures the meaning of *graduated* in line 9?

A. equal
B. progressive
C. selective
D. mature

Explanation

CRAFT AND STRUCTURE

57. One problem is that sunspots themselves are so poorly understood. Observations have revealed that the swirly smudge represent areas of intense magnetic activity where sun's radiative energy has been blocked, and that they are considerably cooler than bright regions of the sun. Scientists have not been able, however, to determine just how sunspots are created or what effect they have on the solar constant (a misnomer that refers to the sun's total radiance at any instant).

As used in the passage, the term solar constant (line 9) refers to:

A. magnetic activity
B. the sun's total radiance
C. the sun's surface temperature
D. wind direction

<div align="right">

[Explanation](#)

</div>

58. The following text is adapted from *Indian Boyhood,* a 1902 memoir by Ohiyesa (Charles A. Eastman), a Santee Dakota writer. In the text, Ohiyesa recalls how the women in his tribe harvested maple syrup during his childhood.

Now the women began to test the trees—moving leisurely among them, axe in hand, and striking a single quick blow, to see if the sap would appear. <u>The trees, like people, have their individual characters; some were ready to yield up their life-blood, while others were more reluctant.</u> Now one of the birchen basins was set under each tree, and a hardwood chip driven deep into the cut which the axe had made. From the corners of this chip—at first drop by drop, then more freely—the sap trickled into the little dishes.

Which choice best describes the function of the underlined sentence in the text as a whole?

A. It portrays the range of personality traits displayed by the women as they work.
B. It foregrounds the beneficial relationship between humans and maple trees.
C. It demonstrates how human behavior can be influenced by the natural environment.
D. It elaborates on an aspect of the maple trees that the women evaluate.

<div align="right">

[Explanation](#)

</div>

59. The following text is adapted from Gwendolyn Bennett's 1926 poem "Street Lamps in Early Spring."

> Night wears a garment
> All velvet soft, all violet blue...
> And over her face she draws a veil
> As shimmering fine as floating dew...
> And here and there
> In the black of her hair
> The subtle hands of Night
> Move slowly with their gem-starred light.

Which choice best describes the overall structure of the text?

A. It presents alternating descriptions of night in a rural area and in a city.
B. It sketches an image of nightfall, then an image of sunrise.
C. It makes an extended comparison of night to a human being.
D. It portrays how night changes from one season of the year to the next.

<div align="right">

[Explanation](#)

</div>

60. The text is from Anatole France's 1912 novel The Gods Will Have Blood.

Those who make a trade out of foretelling the future rarely grow rich. Their attempts to deceive are too easily found out and arouse detestation. And yet it would be necessary to detest them much, much more if they foretold the future correctly. For a man's life would become intolerable, if he knew what was going to happen to him. He would be made aware of future evils, and would suffer their agonies in advance, while he would get no joy of present blessings since he would know how they would end. Ignorance is the necessary condition of human happiness, and it must be admitted that on the whole mankind observes that condition well. We are almost entirely ignorant of ourselves, absolutely of others. In ignorance, we find our bliss, in illusions, our happiness.

The main idea conveyed in the above monologue can best be summarized as

A. let bygones be bygones.
B. the truth will set you free.
C. focus on the moment.
D. do unto others as you would have them do unto you.

61. In 2014, Amelia Quon and her team at NASA set out to build a helicopter capable of flying on Mars. Because Mars's atmosphere is only one percent as dense as Earth's, the air of Mars would not provide enough resistance to the rotating blades of a standard helicopter for the aircraft to stay aloft. For five years, Quon's team tested designs in a lab that mimicked Mars's atmospheric conditions. The craft the team ultimately designed can fly on Mars because its blades are longer and rotate faster than those of a helicopter of the same size built for Earth.

According to the text, why would a helicopter built for Earth be unable to fly on Mars?

A. Because Mars and Earth have different atmospheric conditions
B. Because the blades of helicopters built for Earth are too large to work on Mars
C. Because the gravity of Mars is much weaker than the gravity of Earth
D. Because helicopters built for Earth are too small to handle the conditions on Mars

Directions: The questions that follow the two passages in this section relate to the content of both and to their relationship. The correct response may be stated outright in the passages or merely suggested.

62. The first passage is excerpted from Out or Doors—California and Oregon. by J. A. Graves; the second At the Earth's Core, a work of fiction by Edgar Rice Burroughs.

Passage 1

In the pasture were swales of damp land. literally
overgrown with wild blackberry bushes. They bore prolific crops of
long, black, juicy berries, far superior to the
tame berries, and they were almost entirely free from
Line   seeds. Many a time have I temporarily bankrupted my
5   stomach on hot blackberry roll, with good, rich sauce.
The country fairly teemed with game. Quail and rabbit
were with us all the time. Doves came by the thousands
in the early summer and departed in the fall. In winter
10   the wild ducks and geese were more than abundant. In the
spring wild pigeons visited us in great numbers. There was
one old oak tree which was a favourite resting-place with
them. Sheltered by some live oak bushes. I was always
enabled to sneak up and kill many of them out of this tree.

Passage 2

15   We must have travelled several miles through the
dark and dismal wood when we came suddenly upon a
dense village built high among the branches of the trees.
As we approached it my escort broke into wild shouting
which was immediately answered from within, and a moment
20   later a swarm of creatures of the same strange race
as those who had captured me poured out to meet us.
Again I was the centre of a wildly chattering horde.

I was pulled this way and that. Pinched, pounded,
and thumped until I was black and blue. yet I do not
25   think that their treatment was dictated by either cruelty
or malice—I was a curiosity. a freak. a new plaything.
and their childish minds required the added evidence of all
their senses to back up the testimony of their eyes.

Which most accurately describes the sentiments that the Passage 1 author has toward the "old oak tree" and "oak bushes" (lines 12 and 13) with respect to the sentiments that the Passage 2 author has toward the "wood" (line 16)?

A. Passage 1 author feels a sense of ownership and affectation; Passage 2 author, of self-protection.
B. Passage 1 author feels a sense of nostalgia and whimsy; Passage 2 author, of scathing hostility.
C. Passage 1 author feels a sense of comfort and cover; Passage 2 author, of fore-boding and gloom.
D. Neither author feels a personal connection to these natural elements.

63. This paragraph, taken from a letter the author writes to her sister, is from Mary Shelley's science fiction novel, Frankenstein.

> Will you smile at the enthusiasm I express
>
> concerning this divine wanderer? You would not if
>
> you saw him. You have been tutored and refined by
>
> Line   books and retirement from the world, and you are
>
> 5   therefore somewhat fastidious; but this only renders
>
> you the more fit to appreciate the extraordinary merits
>
> of this wonderful man. Sometimes I have endeavored
>
> to discover what quality it is which he possesses that
>
> elevates him so immeasurably above any other person
>
> 10   I ever knew. I believe it to be an intuitive discernment,
>
> a quick but never-failing power of judgment, a penetration
>
> into the causes of things, unequaled for clearness and
>
> precision; add to this a facility of expression and a
>
> voice whose varied intonations are soul-subduing music.

Lines 10—14 suggest that which of the following pairs of qualities are most admired about the "divine wanderer" first mentioned in line 2?

    A. adventurous and intrepid spirit
    B. magnanimity and overall kindness
    C. perspicacity and eloquence
    D. strength and innocence

Explanation

64. Astronomers are confident that the star Betelgeuse will eventually consume all the helium in its core and explode in a supernova. <u>They are much less confident, however, about when this will happen, since that depends on internal characteristics of Betelgeuse that are largely unknown.</u> Astrophysicist Sarafina El-Badry Nance and colleagues recently investigated whether acoustic waves in the star could be used to determine internal stellar states but concluded that this method could not sufficiently reveal Betelgeuse's internal characteristics to allow its evolutionary state to be firmly fixed.

Which choice best describes the function of the second sentence in the overall structure of the text?

    A. It explains how the work of Nance and colleagues was received by others in the field.
    B. It presents the central finding reported by Nance and colleagues.
    C. It identifies the problem that Nance and colleagues attempted to solve but did not.
    D. It describes a serious limitation of the method used by Nance and colleagues.

[Explanation](#)

65. Text 1
Conventional wisdom long held that human social systems evolved in stages, beginning with hunter-gatherers forming small bands of members with roughly equal status. The shift to agriculture about 12,000 years ago sparked population growth that led to the emergence of groups with hierarchical structures: associations of clans first, then chiefdoms, and finally, bureaucratic states.
Text 2
In a 2021 book, anthropologist David Graeber and archaeologist David Wengrow maintain that humans have always been socially flexible, alternately forming systems based on hierarchy and collective ones with decentralized leadership. The authors point to evidence that as far back as 50,000 years ago some hunter-gatherers adjusted their social structures seasonally, at times dispersing in small groups but also assembling into communities that included esteemed individuals.

Based on the texts, how would Graeber and Wengrow (Text 2) most likely respond to the "conventional wisdom" presented in Text 1?

A. By conceding the importance of hierarchical systems but asserting the greater significance of decentralized collective societies
B. By disputing the idea that developments in social structures have followed a linear progression through distinct stages
C. By acknowledging that hierarchical roles likely weren't a part of social systems before the rise of agriculture
D. By challenging the assumption that groupings of hunter-gatherers were among the earliest forms of social structure

Explanation

66. While researching a topic, a student has taken the following notes:

- In the late 1890s, over 14,000 unique varieties of apples were grown in the US.
- The rise of industrial agriculture in the mid-1900s narrowed the range of commercially grown crops.
- Thousands of apple varieties considered less suitable for commercial growth were lost.
- Today, only 15 apple varieties dominate the market, making up 90% of apples purchased in the US.
- The Lost Apple Project, based in Washington State, attempts to find and grow lost apple varieties

The student wants to emphasize the decline in unique apple varieties in the US and specify why this decline occurred. Which choice most effectively uses relevant information from the notes to accomplish these goals?

A. The Lost Apple Project is dedicated to finding some of the apple varieties lost following a shift in agricultural practices in the mid- 1900s.
B. While over 14,000 apple varieties were grown in the US in the late 1890s, only 15 unique varieties make up most of the apples sold today.
C. Since the rise of industrial agriculture, US farmers have mainly grown the same few unique apple varieties, resulting in the loss of thousands of varieties less suitable for commercial growth.
D. As industrial agriculture rose to prominence in the mid- 1900s, the number of crops selected for cultivation decreased dramatically.

Explanation

67. Henri Matisse's *The Ochre Head* represents the artist's exuberant display of his new

mastery of a technique once peculiar to Picasso. Matisse has learned to artfully separate

color and drawing. The painting depicts a head and shoulders, a bouquet of red flowers in a dark

blue vase sitting upon a bench, a framed drawing of a woman's head, and an unframed painting

5   or drawing, also of a woman. But what is most striking about the painting is the way Matisse has

begun to allow his colors and his forms to play freely, even while they are coordinated. The ochre

of the head runs out past the form. Bits of blue from the bench appear in the man's neckline

or along his shoulder. The colors of the various frames and surfaces of the drawing on the wall

overlap and refuse to be constrained by definite lines of form. Although this technique is not given

10   the kind of free reign Picasso allows it in his Cubist period or in works such as *Minotaur*, it is still

a stunning development for Matisse. And he seems aware of this fact. The painting's composition

references Picasso's *Still Life with Ancient Head* from 1925, signaling Matisse's awareness that he is

borrowing from his younger colleague.

The author uses the word "peculiar" (line 2) to mean which of the following?

    A. strange
    B. abstract
    C. unknown
    D. unique

[Explanation](#)

68. When digging for clams, their primary food, sea otters damage the roots of eelgrass plants growing on the seafloor. Near Vancouver Island in Canada, the otter population is large and well established, yet the eelgrass meadows are healthier than those found elsewhere off Canada's coast. To explain this, conservation scientist Erin Foster and colleagues compared the Vancouver Island meadows to meadows where otters are absent or were reintroduced only recently. Finding that the Vancouver Island meadows have a more diverse gene pool than the others do, Foster hypothesized that damage to eelgrass roots increases the plant's rate of sexual reproduction; this, in turn, boosts genetic diversity, which benefits the meadow's health overall.

Which finding, if true, would most directly undermine Foster's hypothesis?

    A. At some sites in the study, eelgrass meadows are found near otter populations that are small and have only recently been reintroduced
    B. At several sites not included in the study, there are large, well-established sea otter populations but no eelgrass meadows.
    C. At several sites not included in the study, eelgrass meadows' health correlates negatively with the length of residence and size of otter populations.
    D. At some sites in the study, the health of plants unrelated to eelgrass correlates negatively with the length of residence and size of otter populations.

[Explanation](#)

69. The more diverse and wide ranging an animal's behaviors, the larger and more energy demanding the animal's brain tends to be _____ from an evolutionary perspective, animals that perform only basic actions should allocate fewer resources to growing and maintaining brain tissue. The specialized subtypes of ants within colonies provide an opportunity to explore this hypothesis.

Which choice completes the text with the most logical transition?

    A. Subsequently,
    B. Besides,
    C. Nevertheless,
    D. Thus,

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[Explanation](#)

</div>

70. While researching a topic, a student has taken the following notes:

- The factors that affect clutch size (the number of eggs laid at one time) have been well studied in birds but not in lizards.
- A team led by Shai Meiri of Tel Aviv University investigated which factors influence lizard clutch size.
- Meiri's team obtained clutch-size and habitat data for over 3,900 lizard species and analyzed the data with statistical models.
- Larger clutch size was associated with environments in higher latitudes that have more seasonal change.
- Lizards in higher-latitude environments may lay larger clutches to take advantage of shorter windows of favorable conditions.

The student wants to emphasize the aim of the research study. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A. Researchers wanted to know which factors influence lizard egg clutch size because such factors have been well studied in birds but not in lizards.
B. After they obtained data for over 3,900 lizard species, researchers determined that larger clutch size was associated with environments in higher latitudes that have more seasonal change.
C. We now know that lizards in higher-latitude environments may lay larger clutches to take advantage of shorter windows of favorable conditions.
D. Researchers obtained clutch-size and habitat data for over 3,900 lizard species and analyzed the data with statistical models.

[Explanation](#)

71.

Text 1

Astronomer Mark Holland and colleagues examined four white dwarfs—small, dense remnants of past stars—in order to determine the composition of exoplanets that used to orbit those stars. Studying wavelengths of light in the white dwarf atmospheres, the team reported that traces of elements such as lithium and sodium support the presence of exoplanets with continental crusts similar to Earth's.

Text 2

Past studies of white dwarf atmospheres have concluded that certain exoplanets had continental crusts. Geologist Keith Putirka and astronomer Siyi Xu argue that those studies unduly emphasize atmospheric traces of lithium and other individual elements as signifiers of the types of rock found on Earth. The studies don't adequately account for different minerals made up of various ratios of those elements, and the possibility of rock types not found on Earth that contain those minerals.

Based on the texts, how Putirka and Xu (Text 2) most likely characterize the conclusion presented in Text 1?

A. As unexpected, because it was widely believed at the time that white dwarf exoplanets lack continental crusts
B. As premature, because researchers have only just begun trying to determine what kinds of crusts white dwarf exoplanets had
C. As questionable, because it rests on an incomplete consideration of potential sources of the elements detected in white dwarf atmospheres
D. As puzzling, because it's unusual to successfully detect lithium and sodium when analyzing wavelengths of light in white dwarf atmospheres

72. "The Poet Walt Whitman" is an 1887 essay by José Martí, a Cuban author and political activist, originally written in Spanish. In the essay, Martí explores the value of literature, arguing that a society's spiritual well-being depends on the character of its literary culture: _____
Which quotation from a translation of "The Poet Walt Whitman" most effectively illustrates the claim?

A. "Poetry, which brings together or separates, which fortifies or brings anguish, which shores up or demolishes souls, which gives or robs men of faith and vigor, is more necessary to a people than industry itself, for industry provides them with a means of subsistence, while literature gives them the desire and strength for life."
B. "Every society brings to literature its own form of expression, and the history of the nations can be told with greater truth by the stages of literature than by chronicles and decades."
C. "Where will a race of men go when they have lost the habit of thinking with faith about the scope and meaning of their actions? The best among them, those who consecrate Nature with their sacred desire for the future, will lose, in a sordid and painful annihilation, all stimulus to alleviate the ugliness of humanity."

D. "Listen to the song of this hardworking and satisfied nation; listen to Walt Whitman. The exercise of himself exalts him to majesty, tolerance exalts him to justice, and order to joy.

73. Many people who simply enjoy listening to popular music do not realize that it has been used to express religious and political messages. After all, popular music has repeatedly been adopted by social movements to express their viewpoints, since it has the potential to contribute to the "conversion" of nonmembers to the movement's position, as well as to raise the morale and to express the solidarity of the movement's participants.

Which one of the following most accurately expresses the main conclusion of the argument?

- A. Popular music accounts for the success of social movements.
- B. Popular music's entertainment value has been overemphasized.
- C. Popular music is the most effective way of converting people to social movements.
- D. Popular music has purposes other than mere entertainment.

74. Sociologist: Some anthropologists claim that cultures can most effectively respond to the threat of cultural decay by replacing or abandoning many of their traditions so that other traditions may endure. But since each of its traditions is essential to a culture's identity, this strategy _____.

Which one of the following most logically completes the sociologist's argument?

- A. can save those cultures capable of reflecting on their customs and envisioning alternatives
- B. will ensure the elimination of a culture rather than prevent its decay
- C. can be implemented by all and only those cultures studied by anthropologists
- D. constitutes the most effective response to the threat of cultural decay

75. Dark honey tends to have a higher antioxidant content than light-colored honey, and the most healthful strains of honey are all unusually high in antioxidants. However, certain strains of honey produced by bees harvesting primarily sage nectar are among the most healthful strains of honey, even though they are also among the lightest-colored strains of honey.

Which one of the following is most strongly supported by the information above?

    A. Some strains of honey produced by bees harvesting sage nectar are unusually high in antioxidants.
    B. Most plants produce nectar that, when harvested by bees, results in light-colored honey.
    C. Light-colored honey tends to be more healthful than dark honey.
    D. Certain strains of honey produced by bees harvesting primarily sage nectar are unusually low in antioxidants.

Explanation

76. In 2007, computer scientist Luis von Ahn was working on converting printed books into a digital format. He found that some words were distorted enough that digital scanners couldn't recognize them, but most humans could easily read them. Based on that finding, von Ahn invented a simple security test to keep automated "bots" out of websites. The first version of the reCAPTCHA test asked users to type one known word and one of the many words scanners couldn't recognize. Correct answers proved the users were humans and added data to the book-digitizing project.

Which choice best states the main purpose of the text?

    A. To discuss von Ahn's invention of reCAPTCHA
    B. To explain how digital scanners work
    C. To call attention to von Ahn's book-digitizing project
    D. To indicate how popular reCAPTCHA is

Explanation

77. While researching a topic, a student has taken the following notes:

- African American women played prominent roles in the Civil Rights Movement, including at the famous 1963 March on Washington.

- Civil rights activist Anna Hedgeman, one of the march's organizers, was a political adviser who had worked for President Truman.

- Civil rights activist Daisy Bates was a well-known journalist and advocate for school desegregation.

- Hedgeman worked behind the scenes to make sure a woman was included in the lineup of speakers at the march.

- Bates was the sole woman to speak, delivering a brief but memorable address to the cheering crowd.

The student wants to compare the two women's contributions to the March on Washington. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A. Hedgeman and Bates contributed to the march in different ways; Bates, for example, delivered a brief but memorable address.
B. Hedgeman worked in politics and helped organize the march, while Bates was a journalist and school desegregation advocate.
C. Although Hedgeman worked behind the scenes to make sure a woman speaker was included, Bates was the sole woman to speak at the march.
D. Many African American women, including Bates and Hedgeman, fought for civil rights, but only one spoke at the march.

78. Railroads rely increasingly on automation. Since fewer railroad workers are needed, operating costs have been reduced. This means that we can expect the volume of freight shipped by rail to grow. The chief competitor of railway shipping is shipping by truck, and no reduction in operating costs is predicted for the trucking industry.

Which one of the following most accurately states the argument's overall conclusion?

    A. The volume of freight shipped by rail can be expected to increase.
    B. Increasing reliance on automation means that fewer railroad workers are needed.
    C. No reduction in operating costs is predicted for the trucking industry.
    D. Operating costs for railroads have been reduced as a result of increased reliance on automation.

79. A geologist recently claimed to have discovered in clay a previously unknown form of life: "nanobes," one-tenth the size of the smallest known bacteria. However, it is unlikely that nanobes truly are living things. They are probably inanimate artifacts of the clay's microscopic structure, because a nanobe is too small to contain a reproductive mechanism, a prerequisite for life.

Which one of the following, if true, most seriously weakens the argument?

    A. No known form of bacteria is complicated enough in structure to engage in a sexual type of reproduction.
    B. Single-celled creatures can combine to form a multicelled structure and then reproduce before they disband into separate single cells again.
    C. The material phenomena that some scientists claim are the fossilized remains of bacteria in meteorites from Mars are approximately the same size as nanobes

    D. Previous definitions of life were based on research.

80. Spanning more than 1,500 miles, the border between Canada and the United States has been called the longest undefended international boundary in the world. This is true to some extent, in that neither the United States nor Canada maintains a military presence at the border. <u>But as anyone who has crossed from one side of Niagara Falls to the other knows, civilian law enforcement is present and accounted for at checkpoints on both sides of the boundary, where entrants are monitored and customs laws administered.</u> Partly because of our cultural similarities and partly because of the remarkable amiability of our diplomatic relations over the past 150 years, it can sometimes seem almost as though the distinction between Canada and the United States is more of policy than of practice.

Which choice best states the function of the underlined sentence in the text as a whole?

A. To analyze the economic consequences of international borders on global commerce
B. To explain the details of the security screenings that people who cross the U.S.-Canadian border must undergo
C. To give evidence of the continual border hostility that the United States and Canada have had since the war of 1812
D. To clarify that although the United States and Canada have friendly relations, they are still clearly two different countries

Explanation

81. Halley's Comet falls into a category called Great Comets, which are those that become bright enough during their passage near Earth to be observed by the naked eye. Predicting whether a comet will be "Great" has proven a challenging task even for the most talented astronomers and astrophysicists. The comet must pass through a relatively small expanse of space near enough to the sun to reflect a large amount of light but remain close enough to Earth for the light to reach and penetrate our atmosphere. Moreover, it is thought that a Great Comet must possess a large and active nucleus, though the exact physics of comet nuclei— which consist of dust, ice, and perhaps particulate minerals-- are still poorly understood. Even so, comets meeting these criteria have on occasion failed to achieve "greatness."

According to the text, which characteristic of a comet is most essential to its being categorized as a "Great Comet'?

   A. Whether it has a significant proportion of dust and ice in its core
   B. Whether it has an orbital eccentricity greater than zero
   C. Whether humans can observe it without a telescope
   D. Whether it contributes to meteor activity visible by astronomers

 Explanation

82. The text is from Booker T. Washington's 1901 autobiography.

I was born a slave on a plantation in Franklin County, Virginia. I am not quite sure of the exact place or exact date of my birth, but at any rate I suspect I must have been born somewhere and at some time. As nearly as I have been able to learn, I was born near a cross-roads post-office called Hale's Ford, and the year was 1858 or 1859. I do not know the month or the day. The earliest impressions I can now recall are of the plantation and the slave quarters—the latter being the part of the plantation where the slaves had their cabins.

Washington's primary purpose in the text above is most likely

A. to lament his increased senility.
B. to express his identity.
C. to critique his familial relations.
D. to underscore his rootlessness.

83. It is with a kind of fear that I begin to write the history of my life. I have, as it were a superstitious hesitation in lifting the veil that clings about my childhood like a golden mist. The task of writing an autobiography is a difficult one. When I try to classify my earliest impressions, I find that fact and fancy look alike across the years that link the past with the present. The woman paints the child's experiences in her own fantasy. A few impressions stand out vividly from the first years of my life; but "the shadows of the prison-house are on the rest." Besides, many of the joys and sorrows of childhood have lost their poignancy; and many incidents of vital importance in my early education have been forgotten in the excitement of great discoveries. Therefore, I find that I am only able to present a series of sketches of the episodes that seen to me to be the most interesting and important.

The primary purpose of the passage is to

A. catalogue a set of impressions
B. describe an important event
C. criticize a point of view
D. explain a difficulty

84. I had neither kith nor kin in England, and was therefore as free as air—or as free as an income of eleven shillings and sixpence a day will permit a man to be. Under such circumstances, I naturally gravitated to London, that great cesspool into which all the loungers and idlers of the Empire are irresistibly drained. There I stayed for some time at a private hotel in the Strand, leading a comfortless, meaningless existence, and spending such money as I had, considerably more freely than I ought. So alarming did the state of my finances become, that I soon realized that I must either leave the metropolis and rusticate somewhere in the country, or that I must make a complete alteration in my style of living. Choosing the latter alternative, I began by making up my mind to leave the hotel, and to take up my quarters in some less pretentious and less expensive domicile.

The primary purpose of the phrase *as free as an income of eleven shillings and sixpence a day will permit a man to be* is to

    A. indicate that the narrator's wealth contributed to his freedom
    B. explain why the narrator preferred to live in London
    C. qualify a statement that the narrator made earlier in the paragraph
    D. support the claim that the narrator would never experience true liberty

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[Explanation](#)

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85. Global warming is a serious issue that affects all countries around the globe. The following passage discusses one aspect of this problem.

    1   According to the National Academy of Sciences, Earth's surface temperature has risen by about 1 degree Fahrenheit in the past century, with accelerated warming during the past two decades. There is new and stronger evidence that most of the warming over the last 50 years is attributable to human activities. Human activities have altered the chemical composition of the atmosphere

    5   through the buildup of greenhouse gases—primarily carbon dioxide, methane, and nitrous oxide. The heat-trapping property of these gases is undisputed although uncertainties exist about exactly how Earth's climate responds to them.

The writer repeats the phrase "human activities" for all the following reasons *except* to

        A. ensure clarity
        B. create emphasis
        C. provide specific details and description
        D. help readers follow the flow of ideas

86. New techniques have boosted cattle production and resulted in more meat at lower prices.

  1 To raise meat output, livestock producers have adopted new, intensive rearing techniques relying on grains and legumes to feed their animals. For example, farmers have moved nearly all of the pigs and poultry in industrial countries into giant indoor feeding facilities. There, they eat carefully measured rations of energy-rich grain and protein-rich soybean meal. Cattle everywhere still spend
  5 most of their time dining outdoors, although beef producers—particularly in the United States, but also in Russia, South Africa, and Japan—supplement that roughage with grain in the months before slaughter. By contrast, Australian and South American cattle graze their entire lives, while European beef comes mostly from dairy herds, which eat less grain than American beef herds.

This passage is developed primarily through

        A. time order
        B. comparison and contrast
        C. most to least important details
        D. least to most important details

87. In a study of the cognitive abilities of white-faced capuchin monkeys (*Cebus imitator*), researchers neglected to control for the physical difficulty of the tasks they used to evaluate the monkeys. The cognitive abilities of monkeys given problems requiring little dexterity, such as sliding a panel to retrieve food, were judged by the same criteria as were those of monkeys given physically demanding problems, such as unscrewing a bottle and inserting a straw. The results of the study, therefore, _____.

Which choice most logically completes the text?

    A. could suggest that there are differences in cognitive ability among the monkeys even though such differences may not actually exist.

    B. are useful for identifying tasks that the monkeys lack the cognitive capacity to perform but not for identifying tasks that the monkeys can perform.

    C. should not be taken as indicative of the cognitive abilities of any monkey species other than *C. imitator*.

    D. reveal more about the monkeys' cognitive abilities when solving artificial problems than when solving problems encountered in the wild.

[Explanation](#)

88. When digging for clams, their primary food, sea otters damage the roots of eelgrass plants growing on the seafloor. Near Vancouver Island in Canada, the otter population is large and well established, yet the eelgrass meadows are healthier than those found elsewhere off Canada's coast. To explain this, conservation scientist Erin Foster and colleagues compared the Vancouver Island meadows to meadows where otters are absent or were reintroduced only recently. Finding that the Vancouver Island meadows have a more diverse gene pool than the others do, Foster hypothesized that damage to eelgrass roots increases the plant's rate of sexual reproduction; this, in turn, boosts genetic diversity, which benefits the meadow's health overall.

Which finding, if true, would most directly undermine Foster's hypothesis?

    A. At some sites in the study, eelgrass meadows are found near otter populations that are small and have only recently been reintroduced.
    B. At several sites not included in the study, there are large, well-established sea otter populations but no eelgrass meadows.
    C. At several sites not included in the study, eelgrass meadows' health correlates negatively with the length of residence and size of otter populations.
    D. At some sites in the study, the health of plants unrelated to eelgrass correlates negatively with the length of residence and size of otter populations.

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[Explanation]

</div>

89. Asymmetric encryption relies on multiple advanced mathematical computations like discrete logarithms or the multiplication of 100-digit prime numbers. The specific mathematical details are far too complex for our purposes here, but the important concept is that asymmetric encryption functions by both a *public key* (shared to the world) and a *private key* (known only to the owner).

It can be reasonably concluded that the intended audience for the text is

    A. historical scholars.
    B. mathematicians.
    C. a general audience.
    D. code-breakers.

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[Explanation]

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90. Cerrato: Economists argue both that the higher turnover rate of part-time workers shows them to be much more likely to be dissatisfied with their jobs than full- time workers are and that lower-paid, part-time workers threaten to take jobs from fill-time employees. But because job efficiency is positively correlated with job satisfaction, companies are unlikely to replace satisfied employees with dissatisfied ones. Therefore, _____.

Which one of the following most logically completes Cerrato's argument?

A. full-time workers are likely to lose jobs to part-time workers
B. the companies earning the greatest profits tend to be those that pay their workers the highest wages
C. dissatisfied part-time workers are unlikely to threaten the jobs of fulltime workers
D. the higher turnover rate of part-time workers is only partly caused by their greater job dissatisfaction

[Explanation](#)

91. The following text is adapted from Oscar Wilde's 1891 *novel The Picture of Dorian Gray*. Dorian Gray is taking his first look at a portrait that Hallward has painted of him.

Dorian passed listlessly in front of his picture and turned towards it. When he saw it he drew back, and his cheeks flushed for a moment with pleasure. A look of joy came into his eyes, as if he had recognized himself for the first time. He stood there motionless and in wonder, dimly conscious that Hallward was speaking to him, but not catching the meaning of his words. The sense of his own beauty came on him like a revelation. He had never felt it before.

According to the text, what is true about Dorian?

A. He wants to know Hallward's opinion of the portrait.
B. He is delighted by what he sees in the portrait.
C. He prefers portraits to other types of paintings.
D. He is uncertain of Hallward's talent as an artist.

[Explanation](#)

92. The government's tax collection agency has not followed through on its plan, announced a year ago, to crack down on violations of corporate income tax law. Audits are the primary tool for detecting such violations, and over the past year, not a single audit of corporate income tax returns has been completed.

Which one of the following, if true, most weakens the argument?

A. The plan to crack down on violations of corporate income tax law is part of a broad campaign against corporate misconduct.
B. The number of personal income tax returns audited over the past year is greater than in previous years.
C. Most audits of corporate income tax returns do not reveal any significant violations.
D. It generally takes longer than one year to complete an audit of a corporate income tax return.

<div align="right">

Explanation

</div>

93. The railway authority inspector who recently thoroughly checked the tracks testified that they were in good condition. Thus, since the inspector has no bias in the matter, we should be suspicious of the newspaper reporter's claim that the tracks are in poor condition.
The reasoning in the argument above is most similar to the reasoning in which one of the following arguments?
A. My pottery instructor says that making pottery will not cause repetitive-motion injuries if it is done properly. So I will probably not get such injuries, for whenever I do pottery I use the proper techniques that my instructor taught me.
B. Gardner, a noted paleontologist who has no vested interest in the case, assures us that the alleged dinosaur bones are not old enough to be from dinosaurs. So we should be skeptical of Penwick's claim to have found dinosaur bones, for Gardner inspected the bones carefully.
C. The engineer hired by the company that maintains the bridge has examined the bridge and declared it safe. This engineer is the only one who has given the bridge a close examination recently. Thus, we should consider the bridge safe.
D. The reporter who recently interviewed the prime minister said the prime minister appeared to be in poor health. But despite the fact that the reporter works for a paper with opposition leanings, we should accept that the prime minister is in poor health. After all, reporters won't let their bias affect them when the truth of their claims will eventually be discovered.

<div align="right">

Explanation

</div>

94. The key deer was hunted to near extinction, but the creature was protected by compassionate and hard-working conservationists.

1　One of the rarest and most prized animals in the United States is the key deer. This tiny creature was once hunted without mercy. It was not uncommon for a single hunter to kill more than a dozen key deer in one day. Often, hunters set grass fires to driver the creatures out of hiding; other times, they were attacked with harpoons while they were swimming. In the 1950s, conservationists—led by the

5　Boone and Crockett Club—saved the key deer from extinction. Today, the surviving key deer are protected by the United States government in the Key Deer National Wildlife Refuge, created in 1957.

Which of the following is implied in the passage?

A. Species become at risk of dying out when they are hunted too extensively.
B. The government is still the most effective way to safeguard the environment because it has the resources to establish effective programs.
C. Endangered species will only be saved if they become a priority.
D. Government officials and private citizens must work together to help the environment.

Explanation

95. "Tsunami," the Japanese word for seismic sea-waves, is also used as the scientific term for this phenomenon. Most tsunamis originate around the so-called Ring of Fire, a zone of volcanoes and seismic activity that encircles the Pacific Ocean.

1　Tsunamis, or seismic sea-waves, are gravity waves set in motion by underwater disturbances associated with earthquakes. These waves are frequently called "tidal waves" although they have nothing to do with the tides. Tsunamis consist of a decaying train of waves and may be detectable on tide gauges for as long as a week. Near its origin, the first wave of a tsunami may be the largest; at greater

5　distances, the largest is normally between the second and seventh wave. Since 1819, more than forty tsunamis have struck the Hawaiian Islands.

It can be inferred from this passage that

A. tsunamis are rare occurrences, so few people have experienced the
B. scientists know a great deal about tsunamis, especially their cause and prevention
C. tsunamis have been studied extensively and are well-understood by scientists

D. tsunamis can be very dangerous

Explanation

96. The American Revolution (1776—1783) resulted in America's independence from Great Britain. The first armed encounter of the Revolution took place in Concord, Massachusetts, where the British force in Boston numbered about 3500 men. The following is a contemporary account of the landmark battle.

1 On the 18th of April at eleven at night, about eight hundred Grenadiers and light infantry were ferried across the Bay to Cambridge, from whence they marched to Concord, about twenty miles. The Congress had been lately assembled at that place, and it was imagined that the General had intelligence of a magazine being formed there and that they were going to destroy it.

5 The people in the country (who are all furnished with arms and have what they call Minute Companies in every town ready to march on any alarm) had a signal, it is supposed, by a light from one of the steeples in town. Upon the troops' embarking, the alarm spread through the country, so that before daybreak the people in general were in arms and on their march to Concord.

About daybreak a number of people appeared before the troops on Lexington Common. When they

10 (the American colonists) were told to disperse, they fired on the troops and ran off, upon which the Light Infantry pursued them and brought down about fifteen of them. The troops went on to Concord and executed the business they were sent on, and on their return found two or three of their people lying in the agonies of death, scalped, with their noses and ears cut

off and eyes bored out—which exasperated the soldiers exceedingly. A prodigious number of people now occupied the

15 hills, woods, and stone walls along the road. The Light Troops drove some parties from the hills, but all the road being enclosed with store walls served as a cover to the rebels, from whence they fired on the troops.... In this manner were the troops harassed in their return for seven or eight miles.

The writer's tone in the second paragraph is best described as

A. carefully impartial
B. horrified and dismayed
C. astonished and amazed
D. disdainful and condescending

97. Studying has many uses, as the following passage argues.

1   Studies serve for delight, for ornament, and for ability. Their chief use for delight is in privateness and retiring; for ornament, is in discourse; and for ability, is in the judgment and disposition of business. For expert men can execute, and perhaps judge the particulars, one by one; but the general counsels, and the plots and marshaling of affairs, come best from those that are learned. To spend

5   too much time in studies is sloth; to use them too much for ornament is affectation; to make judgement wholly by their rules is the humor of a scholar. They perfect nature and are perfected by experience: for natural abilities are like natural plants that need proyning by study; and studies themselves do give forth directions too much at large, except they be bounded in by experience.
Crafty men contemn (condemn) studies, simple men admire them, and wise men use them; for they

10   teach not their own use; but that is a wisdom without them and above them, won by observation. Read not to contradict and confute; nor to believe and take for granted; nor to find talk and discourse; but to weigh and consider. Some books are to be tasted, others to be swallowed, and a few to be chewed and digested; that is, some books are to be read only in parts; others to be read, but not curiously, and

some few to be read wholly, and with diligence and attention. Some books also may

15 be read by deputy, and extracts made of them by others; but that would be only in the less important arguments, and the meaner sorts of books, else distilled books are like common distilled waters, flashy things. Reading maketh a full man; conference a ready man; and writing an exact man. And therefore, if a man write little, he had need have a great memory; if he confer little, he need have a great wit; and if he read little, he need have much cunning, to seem to know that he doth not.

The speaker's tone is best described as

    A. diffident and modest
    B. precarious
    C. ironic
    D. authoritative and confident

98. *Chief Joseph, leader of the Nez Perce Indians, delivered the following surrender speech in 1877. The speech has come to be called "I Will Fight No More Forever."*

1 Tell General Howard I know his heart. What he told me before, I have in my heart. I am tired of fighting. Our chiefs are killed. Looking Glass is dead. Toohoolhoolzote is dead. The old men are all dead. It is the young men who say yes and no. He who led on the young men is dead. It is cold and we have no blankets. The little children are freezing to death. My people, some of them, have run

5 away to the hills and have no blankets, no food: no one knows where they are—perhaps freezing to death. I want to have time to look for my children and see how many I can find. Maybe I shall find them among the dead. Hear me, my chiefs. I am tired; my heart is sick and sad. From where the sun now stands I will fight no more forever.

As used in line 3, the sentence "It is the young men who say yes and no" is best understood to mean

A. even the young men cannot save them now
B. Chief Joseph laments the necessity of having the tribe led by inexperienced men
C. young men are better leaders than older men
D. Chief Joseph has been forced from power by the young men

99.

1   Ancient savage tribes played a primitive kind of football. About 2,500 years ago there was a ball-kicking game played by the Athenians, Spartans, and Corinthians, which the Greeks called *Episkuros*. The Romans had a somewhat similar game called *Harpastum*. According to several historical sources, the Romans brought the game

5   with them when they invaded the British Isles in the first century, AD. The game today known as "football" in the United States can be traced directly back to the English game of rugby, although there have been many changes to the game. Football was played informally on university fields more than a hundred years ago. In 1840, a yearly series of informal "scrimmages" started at Yale University. It took more than

10   twenty-five years, however, for the game to become part of college life. The first formal intercollegiate football game was held between Princeton and Rutgers teams on November 6, 1869 on Rutgers's home field at New Brunswick, New Jersey, and Rutgers won.

The writer's main idea is best stated as:

A. The Romans, Athenians, Spartans, and Corinthians all played a game like football.
B. Football is a very old game; its history stretches back to ancient days.
C. American football comes from a British game called "rugby."
D. Football is a more popular game than baseball, even though baseball is called "America's pastime."

100.

1 It takes no calendar to tell root and stem that the calm days of mid-summer are here. Last spring's sprouted seed comes to fruit. None of these things depends on a calendar of the days and months. They are their own calendar, marks on a span of time that reaches far back into the shadows of time. The mark is there for all to see, in every

5 field and meadow and treetop, as it was last year and then years ago and when the centuries were young.

The time is here. This is the point in the great continuity when these things happen, and will continue to happen year after year. Any summer arrives at this point, only to lead on to the next and the next, and so to summer again. These things we can

10 count on; these will happen again and again, so long as the earth turns.

The passage indicates that the author experiences a feeling of

A. frustration
B. fear of the forces of nature
C. pessimism
D. serene confidence

YOUR PERSONALIZED PATH TO UNIVERSITY SUCCESS: ANANNT EDUCATION'S COMPREHENSIVE **ADMISSION COUNSELING SERVICES**

At Anannt Education, we believe that every student is unique and deserves personalized admission counseling. That's why our process starts with a thorough evaluation of both the student's credentials and goals, as well as the expectations of their parents. Here's a phase-by-phase breakdown of our services.

Phase 1: Student evaluation and compatibility
In this initial phase, we meet with the student and their parents to discuss the student's credentials and goals, as well as the parents' expectations. This helps us get to know the student and ensure that our services are a good fit for their needs.

Phase 2: Getting to know each other and preparation for the application process
In this phase, we work to develop a strong relationship and establish trust between the student and their counselor. We also outline a clear timeline for the entire application process, including milestones and plans for the summer before applications are due.

Phase 3: Applying
This is the most intensive part of the process, with weekly meetings between the student and counselor from the end of August to early January. The goal is to ensure that all applications are completed on time and to the highest quality.

Phase 4: Follow-Up
After the applications have been submitted, we don't just sit back and relax. Our counselors follow up with universities to make sure all documents have been received and that the applications are complete and ready for review.

Phase 5: Application results and scholarship negotiations
Once universities announce their results, it's time for students to respond. This may involve wait-list management and letters of continued interest, or it may

involve negotiating scholarships and financial aid. Our counselors are there to guide students through this process and advocate for their best interests.

Phase 6: Visa counseling
If a student is accepted to a university abroad, we provide guidance on the visa process, including verifying documents and preparing for the visa interview.

Phase 7: #UniversityReady
Finally, we help students get #UniversityReady with a series of webinars on topics like adjusting to the education system, the importance of networking, and acclimating to a new environment. This helps ensure that they are fully prepared for success in their new university.

GRATITUDE

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With heartfelt gratitude,