Practice Test 1:
Answers and
Explanations

PRACTICE TEST 1 ANSWERS AND EXPLANATIONS

Section 3

1. **A** Point C has the same x-coordinate as point D, so $s = 8$. Point C also has the same y-coordinate as point B, so $t = 7$. That means that Quantity A is greater.

2. **A** The punch is made with two parts soda and three parts ice cream. This means that in one mixture, if you add two parts soda, then that's $4 \times 2 = 8$ parts sugar and $5 \times 2 = 10$ parts citric acid. If you add three parts ice cream, then that's $3 \times 3 = 9$ parts sugar and $2 \times 3 = 6$ parts citric acid. There's $8 + 9 = 17$ total parts sugar and $10 + 6 = 16$ total parts citric acid. There's more sugar than citric acid. Choice (A) is correct.

3. **B** This is a quantitative comparison (what we call a quant comp) question with variables, so Plug In more than once (for more on Plugging In see Chapter 9). To easily compare the two quantities, recycle the number in the problems by Plugging In $x = 5$. This problem involves averages, so draw an Average Pie (see page 388 for details). If $x = 5$, and the average high temperature over the course of 5 days is 70 degrees, then the total temperature for the 5 days is $5 \times 70 = 350$. The problem states that one additional day has a high temperature of 75 degrees, so draw another Average Pie. There are now six days and the total high temperature is $350 + 75 = 425$ and the average high temperature for the six days is $\frac{425}{6} = 70\frac{5}{6}$. This is less than the 71-degree average specified in the problem. Because the two quantities cannot both equal 5, eliminate (C). If it is unclear whether the value for x needs to be greater or less than 5 to make the average high temperature at the end of the problem equal to 71 degrees, Plug In again. This time, try a number less than 5, such as $x = 4$. If $x = 4$, then the total temperature for 4 days with an average of 70 degrees is $4 \times 70 = 280$. The addition of one day with a high temperature of 75 degrees means that the total high temperature is $280 + 75 = 355$ over the course of 5 days. Therefore, the average is $\frac{355}{5} = 71$. Therefore, the correct value of x is 4 and so the value of Quantity A is 4. This is less than the value of Quantity B, so the correct answer is (B).

4. **D** Because $\triangle QRS$ is isosceles, side RS must be equal to one of the other sides, and x could measure 4 or 7. Thus, the perimeter could be $4 + 4 + 7 = 15$, or the perimeter could be $4 + 7 + 7 = 18$. You can't tell if the perimeter is greater or less than 17, so the answer is (D). Remember, you cannot trust the figure to be drawn to scale!

5. **E** and **F**

   Start by finding the mean for Set A—this can be done by calculating the sum of the set divided by 4, or by observing that the numbers are evenly spaced, so the sum must be the average of the two middle numbers. The total variance of the set (the total distance of the members from the mean) is 8. Therefore, the possible values of x must create a total variance for Set B of equal to or greater than 8. Since the values of Set A are evenly spaced with a difference of 2 between each value, look for the answer choice that creates the same condition for Set B. The value 18 creates the set {12, 14, 16, 18}, which has a mean of 15 and a total variance from the mean of 8. This set would thus have the same standard deviation as that of Set A. Since the question asks for the values of x that would create a Set B with a higher standard deviation than that of Set A, x must be greater than 18. The correct answers are (E) and (F).

6. **C** Plug In numbers for the sides. Let AD = 4, so EG = 8. Let l = 3. The area of $ABCD$ = 3 × 4 = 12, and the area of EFG = $\frac{1}{2}$ (3 × 8) = 12. The two quantities can be equal, so eliminate (A) and (B). Try changing your numbers, and you will see that the two quantities will always be equal.

7. **B** FOIL out the equation given, and you'll get $(3x - 4y)(3x + 4y) = 9x^2 - 16y^2$, so Quantity A is 2. Quantity B is therefore bigger, and the answer is (B).

8. **C** Solve for a by adding 2 to each side to get $8a = 24$. Divide by 8 to find $a = 3$. Plug $a = 3$ into the second equation to find $4(3) - 1 = 12 - 1 = 11$. Alternatively, you could save yourself some time by noticing that $8a - 2$ is $2(4a - 1)$. If $2(4a - 1) = 22$, divide by 2 to get $4a - 1 = 11$.

9. **56** Twenty percent of the sweaters in the store are white, so there are $200 \times \frac{20}{100}$ = 40 white sweaters. There are 200 − 40 = 160 sweaters remaining. Of the remaining sweaters, $160 \times \frac{40}{100}$ = 64 are brown. That means that 160 − 64 = 96 are blue. There are 96 − 40 = 56 more blue sweaters than white sweaters.

10. **D** Because 4^{12} is a common factor of both 4^{13} and 4^{12}, you can rewrite the numerator as $4^{12}(4 - 1)$. Now look at the whole fraction: $\frac{4^{12}(4 - 1)}{4^{11}}$. You can divide 4^{12} by 4^{11}, leaving you with $4^1(4 - 1)$. Now the calculation should be much easier: 4 × 3 = 12, (D).

11. **A** The question deals with the total number of nationwide newsmagazine subscriptions in 1995 and 2010. These years are only present in the top chart, so use this chart to determine the total number of nationwide newsmagazine subscriptions in these years. In 1995, Newsmagazine x represented 24.6% of total nationwide newsmagazine subscriptions and there were 1.5 thousand subscriptions. Set up an equation to find that 1.5 = $\frac{24.6}{100 \text{ (total)}}$ and the total is 6.09 thousand subscriptions in 1995. In 2010, Newsmagazine x represented 11.7% of total nationwide newsmagazine subscriptions and there were 10.5 thousand subscriptions. Set up an equation to find that 10.5 = $\frac{11.7}{100 \text{ (total)}}$ and the total is 89.74 thousand subscriptions. The question asks what percent less the total number of nationwide newsmagazine subscriptions is from the total number of nationwide newsmagazine subscriptions in 2010. Use the percent change formula to find that $89.74 - \frac{6.09}{89.74}$ = 93.2%. The correct answer is (A).

12. **B** In 2006, Newsmagazine z accounted for 9,400 out of 57,000 newsmagazine subscriptions. Therefore, Newsmagazine z accounted for approximately 9,000 out of 57,000, or $\frac{1}{6}$, of the nationwide newsmagazine subscriptions.

13. **D** In 1995, there were 1,500 subscriptions to Newsmagazine x, which accounted for approximately 25 percent of total nationwide subscriptions. Total nationwide subscriptions in 1995, then, were equal to about

6,000 (25 percent of total nationwide subscriptions = 1,500). Using the same process, total nationwide subscriptions in 1996 were equal to about 9,000 (30 percent of total nationwide subscriptions = 2,600). The percent increase between 1995 and 1996 is $\dfrac{difference}{original}$ or $\dfrac{9,000 - 6,000}{6,000} = \dfrac{3,000}{6,000} = \dfrac{1}{2}$, or 50 percent.

14. **C** In 1998, Newsmagazine x had 3,300 subscriptions, or 20.5 percent of the total number of newsmagazine subscriptions. Set up the calculation to find the total: $3,300 = \dfrac{20.5}{100}x$. Solve to find that $x = 16,000$.

15. **C** $a = 27 \times \dfrac{1}{3^2} = 3$, and $x = 6 \times \dfrac{1}{3} = 2$. Find $(12)(3^{-x})(15)(2^{-a}) = (12)(3^{-2})(15)(2^{-3}) = \dfrac{(12)(15)}{(3^2)(2^3)}$.
Now, reduce: $\dfrac{(2 \times 2 \times 3)(3 \times 5)}{(3 \times 3)(2 \times 2 \times 2)} = \dfrac{5}{2}$.

16. **B** and **D**

Use the Average Pie (see page 388 for complete explanation of this delicious tool) to find that Jill's mean of 3.75 for 8 evaluations gives her a current total of 3.75 × 8 = 30 points. Use the Average Pie to find that if she needs an average of 4.0 for 12 scores, she needs 4.0 × 12 = 48 total points. Jill still needs 48 − 30 = 18 points. Her four remaining scores must total 18 or greater. Only (B) and (D) have a total of at least 18.

17. **270**

To answer this question, remember that each angle in a rectangle is 90 degrees and there are 180 degrees in a triangle. Look at the figure. When presented with a shape like this, look for shapes that are familiar. The rectangle has been divided into 4 separate triangles. Three of the triangles have one side of the triangle that is represented by the angle of the original rectangle. For example, a triangle is represented by the angles of a and b as well as the 90-degree angle that is represented by point S. Since there are 180 degrees in a triangle, and 90 of those degrees are found at point S, the sum of angles a and b is 90. The same principle can be applied to the triangle that is created by angles c, d, and point T, as well as the triangle created by angles e, f, and point U. Since this is true, $c + d = 90$ and $e + f = 90$. Therefore, the sum of all the angles is 270.

18. **B** Plug In the Answers, starting with (C). If the total is 55, then the probability would be $\left(\dfrac{3}{55}\right)\left(\dfrac{2}{54}\right)$, which does not equal $\dfrac{3}{55}$. The denominator is too large, so try (B). If the total is 11, then the probability is $\left(\dfrac{3}{11}\right)\left(\dfrac{2}{10}\right)$, which reduces to $\dfrac{3}{55}$.

19. **D** Use the group formula to solve this problem, which is Total = Group 1 + Group 2 − Both + Neither. Because the question states that all the students take calculus, English composition, or both, there is no Neither group. So, Neither = 0. The question states that half the students take calculus and half do not. This means 1,200 students take calculus and 1,200 do not. The question then provides that one-third of the students who take calculus also take English composition. This means that one-third of 1,200 students take both calculus and English composition, so Both = 400. Make Group 1 the number of students who only take calculus. There are 2,400 students, so the formula is now 2,400 = 1,200 + Group 2 − 400. Group 2 is the number of students who take English composition. Find the value of Group 2, which is 1,600. The correct answer is (D).

20. **A** To solve this expression, you need to break apart the factorial of 13 to the common prime number in the denominator, which in this case is the number 2. 13! can be expressed as $13 \times 12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$. When you break apart this factorial into its prime numbers, you are left with $13 \times 11 \times 7 \times 5^2 \times 3^5 \times 2^{10}$. For a fraction to result in an integer, the denominator of the fraction must share at least one prime factor with the numerator. The greatest number of 2s that can be found in the prime factorization of 13! is 10, so $x \leq 10$. Eliminate (B), (C), and (E). Now for the tricky part! Any nonzero number raised to the power 0 is 1. Since the result when any integer is divided by 1 is also an integer, 0 must be included in the range of possible x values. The answer is (A).

Section 4

1. **A prowess** and **E maladroit**

   The first blank has a strong clue, so begin there. The blank is describing the *professor...as a teacher*, and gives further insight that *she shows more...teaching skills* than her colleagues. The transition word *and* indicates that there is consistency between her description as a *noteworthy intellect* and her skills as a teacher. Therefore, a good word for the first blank is "skills." Choice (A), *prowess*, is a good match for "skills," so keep (A). Choice (B), *profligacy*, means reckless extravagance and (C), *orthodoxies*, means beliefs. Eliminate (B) and (C). The second blank is describing the professor's *colleagues' ...teaching skills*. The sentence gives further insight by stating that the professor shows more skills than her colleagues. Therefore, a good word for the blank is "unskilled" or "not good." Choice (D), *spurious*, means fake, which is not a match for "unskilled," so eliminate (D). Choice (E), *maladroit*, is a good match for the blank, so keep (E). Choice (F), *eclectic*, means from different sources, so eliminate (F). The correct answer is (A) and (E).

2. **A irresponsible, D forestall,** and **I avoidable**

   The keys to the first blank are the clues "given their responsibilities as democratically elected officials" and "neglect to do everything they could." These clues indicate that the first blank should have a negative connotation; a word that means something as simple as *bad* would eliminate *thoughtful* and *intuitive*, leaving *irresponsible*. Blanks (ii) and (iii) build on the idea set up in the first half of the sentence. The second blank describes the action that would be bad, so use something that means solve. *Sustain* and *cultivate* are the opposites of what's needed for the second blank, leaving *forestall*. The last blank describes the type of problem, and entirely suggests it's a solvable problem. *Avoidable* is close, and it helps the whole sentence make sense.

3. **D erudite**

   Despite is a transition word that implies a contrast between the student's actual behavior when presenting her thesis and her mentor's advice. The student resorted to using *slang*, language that is informal and unscholarly. Therefore, the word in the blank must mean "formal" or "scholarly." The only word that fits that description is *erudite*, which is the best choice. The other answer choices can be used to describe speech, but none of these words contrast the mentor's advice with the student's use of slang.

4. **C augmented, E overwhelmed,** and **G delicate**

   Start with the second blank. The clue *pungent* tells you this onion did something bad to the delicious stew. *Exaggerated* and *satiated* are positive; *overwhelmed* is the only fit. The transition *otherwise* tells you to change direction from the third blank's clue of *pungent*. Look for a word that means *subtle* or *soft*. Only *delicate* fits. For the first blank, the clue is that Steve's stinky onion hurt the delicate stew. The transition *although* tells you to change direction. So, this addition of the sweet potato was good. Only *augmented* fits.

5. **C banal, E an adept,** and **H sublime**

    The first clue is *its focus on such everyday objects as flowers or fruits apparently uninspired,* so the first blank has to mean something such as "uninspired." *Banal,* which means predictable, matches this. For the second blank, the painter must pay *careful attention,* so the second blank must mean "careful" or "talented," which matches *an adept.* Since the painting is *exemplary,* the third blank must be *sublime.*

6. **C comely** and **D prepossessing**

    The first blank describes Viktor Yushchenko's face. The clue is that his face was *transformed into a monstrous mask by dioxin poisoning* and the transition word *once* tells us that an appropriate word for the blank would be the opposite of monstrous; something like "attractive" would work nicely. *Quiescent* means calm, and *fatuous* means foolish, so those words don't work. *Comely*, which means attractive, is the only word that works. The second blank is describing Yulia Tymoshenko. Both the transition phrase *a study in contrasts* and the clue about *fashion magazines* suggest that a word that means beautiful is appropriate. Though it might not sound like it, *prepossessing* does, in fact, mean beautiful. *Felicitous* means well-expressed, and *decorous* means full of propriety, so although they are both positive words, they aren't as fitting here as the credited response is.

7. **D** The subject of the question is *Scott's explanation of how historical films tended to downplay the harrowing realities of slavery* and the task of the question is referenced by the phrase *would provide the most support*, so this is a question asking you to strengthen a claim in the passage. Determine what the passage says about Scott's explanation. The passage states *Historical films at the time also tended to downplay the harrowing realities of slavery, preferring the term "servant" to "slave," and largely excluding tales of rebellion on the part of enslaved people*. The reference to downplaying the realities of slavery is a description of how the industry responded to *censorship laws that forced film studios to tailor their offerings to what was deemed appropriate by local censorship boards and how filmmakers avoided depictions of romantic relationships between people of different races, as such interactions were either illegal or not tolerated* in the South. The answer that supports Scott's explanation will provide information that confirms or supports the idea of censorship or filmmakers deciding not to make films that violate laws or norms in certain regions of the country. Choice (A) contains the recycled language *Civil War*, but the popularity of *films whose stories took place before the Civil War* is not related to downplaying the realities of slavery. Eliminate (A). Choice (B) is a reversal of the information in the passage and would weaken the assertion. If filmmakers were *incentivized to make controversial films*, then they would have been more likely to make films that did not downplay the harrowing realities of slavery. Eliminate (B). Choice (C) does not strengthen the assertion in the passage. If many early films no longer exist, and researchers *have to rely on descriptions of them*, then the descriptions are subject to different interpretations and do not strengthen with certainty the downplaying referenced. Eliminate (C). Choice (D) is a good paraphrase of the information in the passage. Keep (D). Choice (E) would weaken the explanation for downplaying the realities. If the screenwriters *lacked knowledge of history*, then the explanation for downplaying could be due to this lack of knowledge. Eliminate (E). The correct answer is (D).

8. **B** The subject of the question is what *some of the earliest motion pictures contained* and the task of the question is referenced by the word *implies*, so this is an inference question. Determine what the passage says about what early motion pictures contained. The passage states early motion pictures *frequently juxtaposed grim cruelty with entertainment* and that states responded to the growing popularity by *passing censorship laws that forced film studios to tailor their offerings to what was deemed appropriate.* Therefore, it can be inferred that early films contained grim cruelty and entertainment that was not deemed appropriate. Evaluate the answer choices individually, looking for one that reflects this idea. Choice (A) is a memory trap as the passage does contain conversations about *realistic depictions of slavery* in movies, but this is not necessarily tied to *the*

earliest motion pictures. Eliminate (A). Choice (B) is a good paraphrase of the information in the passage, so keep it. Choice (C) contains the extreme language *exclusively.* This is a reversal of the information in the passage that states early motion pictures *frequently juxtaposed grim cruelty with entertainment.* Eliminate (C). Choice (D) contains the extreme language *only.* That the only storylines in early motion pictures *were accepted by Southerners* is not supported by the information in the passage. Eliminate (D). Choice (E) is a reversal of the information in the passage, which states *filmmakers avoided depictions of romantic relationships between people of different races.* Eliminate (E). The correct answer is (B).

9. **A** The subject of the question is *Scott's research*, and the task of the question is referenced by the word *inferred*, so this is an inference question. Determine what the passage says about Scott's research. The passage says the research *examined films dating back to the first moving pictures over a century ago to explore historical depictions of African Americans* and was *multidisciplinary.* Evaluate the answer choices individually, looking for one that matches these descriptions. Choice (A) is a good paraphrase for the description of *multidisciplinary,* so keep (A). Choice (B) is a memory trap as the passage does state that the research contained *historical films,* but does not compare the volume of focus between historical and other types of films. Eliminate (B). Choice (C) is a memory trap, as the passage mentions *the struggle for racial justice*, but this is not one of the descriptions of Scott's research. Eliminate (C). Choice (D) is also a memory trap. The passage mentions that the content of some of the movies studied by Scott were controversial in the South, not that the research itself is controversial. Eliminate (D). Choice (E) states that the research *had not included films from the twenty-first century.* This is not supported by the information in the passage. Eliminate (E). The correct answer is (A).

10. **C** Only (C) provides a clue to the meaning of *urbane* as used here: the urbane buyer is contrasted with the "unsuspecting or naïve buyer," so it must mean "not unsuspecting" or "not naïve." Choice (A), tantalizingly, dangles the word "rural" before our eyes, trying to take advantage of that word's well-known association with the word *urban. Urbane*, though, means *sophisticated.* Moreover, if (A) were accepted, the strangely illogical proposition that city-dwellers knew best how to buy animals at market would have to be accepted as well. Choice (B), thankfully, presents no such difficulties of interpretation and appears in the definition of the obscure expression itself, not in the comparison between *unsuspecting* and *urbane*.

11. **It relates to the common Renaissance practice of securing suckling pigs for transport to market in a poke, or drawstring bag.**

   In this sentence, the author defines the term *poke* as a drawstring bag. This is the only instance in which the author gives a definition for a word that the reader may not be familiar with because the word *poke* is not a common term used to describe a drawstring bag.

12. **C propriety** and **E decorum**

   The clue is *was such a bad-mannered child.* Time acts as a change-of-direction transition (*as an adult*) that indicates the blank should mean something like "well-mannered." Only *propriety* and *decorum* mean well-mannered. *Diffidence*, *reticence*, and *brashness* are all traits that would be considered bad-mannered. *Friendliness* does not necessarily mean well-mannered.

13. **D whimsical** and **F capricious**

   The blank describes how politicians act. The clue *is acting according to a deliberate plan.* The change-of-direction transition *however* tells you that they appear not to have a plan. Words that mean "unplanned" or "random" should be in the blank. Both *whimsical* and *capricious* fit this meaning. *Conventional* and *conformist* have the opposite meaning. The other two words are unrelated to the blank.

14.   **A irksome** and **B onerous**

The transition *even more* tells you to stay in the same direction as the clue. *Forced to take an alternate road*, *two-hour detour*, and *arduous trip* tell you that the journey was difficult. Put a word that means "hard" or "tiring" in the blank. Only *irksome* and *onerous* fit this meaning. *Facile* and *glib* describe something easy, and *implacable* and *immutable* describe something that doesn't change.

15.   **C adventurous** and **F doughty**

The transition *especially* tells you to stay in the same direction as the clue *willingness to reject prevailing feminine roles and to travel to foreign lands alone*. Thus, she has a bold spirit. Only *adventurous* and *doughty* mean bold. Although she is traveling alone, there is nothing to support that she is lonely, as *forlorn* and *desolate* suggest. *Magnanimous* and *bellicose* do not fit.

16. **A**   The argument concludes that the substitution of microfiber clothes for those made from natural fabrics is not financially sound. The premise is that microfiber clothes last as long as natural fabric clothes but are three times as expensive to produce. The argument assumes that there are no other factors that need to be considered to evaluate the cost effectiveness of switching. Choice (A) points out another factor that would affect the overall costs, and therefore weakens the argument. Choice (B) helps to explain why the microfiber synthetic shirt is more expensive to produce than a natural fiber shirt, but it does not weaken the argument. In (C), comparing natural fiber shirts and other fiber garments is not relevant. Choice (D) strengthens the argument. Choice (E), by pointing out additional costs associated with microfibers, also strengthens the argument.

17. **E**   The first paragraph presents the Gandhara-first view that *Greek influence in Gandhara promoted the development of the new style and form of representation of the divine*. The second paragraph provides evidence Gandharan Buddhas shared certain features with Greek art. Choice (E) provides additional information about those similarities and is the best choice. Choices (A) and (C) undermine the idea that Gandharan artists were responding to outside influences. Choice (B) is irrelevant, and (D) provides evidence for outside influences in Mathura.

18. **B**   The first sentence says that *images in human form emerged around the first century A.D.*, and the middle of the first paragraph states that *earlier Buddhist art was largely aniconic*. You can conclude from these statements that the earliest Buddhist art didn't usually depict the Buddha in human form. Eliminate (A); although human representations first appeared in these regions, the passage doesn't say that the first Buddhist art appeared in the same places. The passage doesn't support (C), (D), and (E).

19. **B** and **C**

For (A), the passage says only that the age of these fossils was *far too recent for humans to have evolved* from them. This does not give an age for the fossils. The last sentence says that *the concept of 'missing link' has changed dramatically*, which answers the question in (B). The last sentence also answers the question in (C) because it says, *the value of his discovery and the debate it generated is unquestionable*.

20.   **Although the concept of "missing link" has changed dramatically and a recent analysis showed Dubois's fossils to be far too recent for humans to have evolved from this "missing link," the value of his discovery and the debate it generated is unquestionable.**

In the last sentence, the author states that the value of Dubois's fossils is *unquestionable*. This statement represents the author's conclusion.

Section 5

1. **B** Draw the figure. You have a square with a circle inside of it that has a radius of 6. Therefore, the length of one side of the square is 12. Quantity A asks for the area of the largest triangle that can be drawn inside the square. The largest triangle cuts the square in half diagonally (subsequently creating a 45:45:90 triangle) and has a height and base of length 12. So the area of the triangle is $\frac{1}{2}$ (12)(12) = 72. Quantity B is asking for the area of the circle with center R. So the area of the circle is $6^2\pi$, or 36π. π is approximately 3, so you know that 36 times 3 is greater than 72. Quantity B is greater.

2. **D** There are a lot of variables in this problem, so start thinking about Plugging In. The variable a has to be the same for each equation. You cannot pick just any number, however, because you must satisfy the equations. When you feel stuck on a problem, start looking at the numbers; remember the math will always work out nicely. Examining the two equations, you realize that 158 × 4 = 632, so these two numbers are related. So the easiest number to Plug In for a is 632. Now you know that $xs = 1$, and $ys = 4$. Since the variable s is the same in both equations, they cancel each other out and you are left with $x = 1$ and $y = 4$. Eliminate (A) and (C). Next, try a FROZEN number (a concept you'll learn later in the book—for now, just know that when you need to choose a number at random, the best numbers to pick are from a mix of these categories: FR (fractions), O (one), ZE (zero), N (negative)). Let's go with $a = -632$. In this case, $xs = -1$ and $ys = -4$ or $x = -1$ and $y = -4$. Eliminate (B). The correct answer is (D).

3. **C** 135 ÷ 7 = 19, remainder 2. 135 ÷ 19 = 7, remainder 2. Both Quantity A and Quantity B equal 2.

4. **D** Plug In. Let $a = 8$ and $b = 4$. Quantity A can be greater than Quantity B, so eliminate (B) and (C). Now let $a = b = 1$. Quantity A can be equal to Quantity B, so eliminate (A).

5. **B** Plug In numbers for a, b, and c. If $a = -2$, $b = 3$, and $c = 4$, then $ac = -8$. Quantity B is greater; eliminate (A) and (C). If $a = 2$, $b = -3$, and $c = -4$, then ac is still negative. Quickly consider different numbers, but realize that Quantity A will always be negative.

6. **D** If $|x| = 6$, then $x = 6$, or $x = -6$. If $x = 6$, then $y = 6 + 4 = 10$. The quantities are equal, so you can eliminate (A) and (B). If $x = -6$, then $y = -6 + 4 = -2$, and Quantity B is greater. Eliminate (C), and select (D).

7. **B** Plug In for the radius, n, and solve for x. Let's make $n = 3$: The area of the base of the cylinder is now 9π, and the circumference of the base is 6π. The ribbon itself is a rectangle, and we now know both its area, which is the same as the area of the base, and its length, which is the same as the circumference of the base. Now we can solve for x, which is the other side of the rectangle: $6\pi x = 9\pi$, so $x = \frac{9\pi}{6\pi}$, or $\frac{3}{2}$. Our value for n is greater than our value for x, so Quantity B is greater.

8. **C** Remember that median is the number that ends up in the middle of the list when you rewrite the list in numerical order. Find x: the even numbers are 2, 2, 6, 8. Because 2 and 6 are in the middle, find their mean: $\frac{2+6}{2}$ = 4. So, $x = 4$. Find y: the prime numbers are 2, 2, 3, 5, 7, 13. Remember: 1 is not prime. Because 3 and 5 are in the middle, find their mean: $\frac{3+5}{2}$ = 4. So, $y = 4$. Find z: the least is 1, and the

greatest is 15. The median of 1 and 15 is $\dfrac{1+15}{2}$ = 8. So, z = 8. For Quantity A, find the median of 2(4), 4, and 8. So, the median of 4, 8, 8 is 8. Quantity B is also 8.

9. **1,625**

Set up a proportion: $\dfrac{1 \text{ hour}}{500 \text{ gallons}} = \dfrac{3.25 \text{ hours}}{x \text{ gallons}}$. Cross-multiply to find that x = 500 × 3.25 = 1,625 gallons.

10. **B** Plug In the Answers, starting with the middle choice. If 120 dogs were sold in March, then 60 cats were sold that month. In April, 240 dogs were sold, along with 180 cats. The total number of dogs and cats sold during those two months is 600, which is too large, so eliminate (C), (D), and (E). Try (B). If there were 100 dogs sold in March, then 50 cats were sold; in April, 200 dogs were sold along with 150 cats. The correct answer is (B) because 100 + 50 + 200 + 150 = 500.

11. **C**
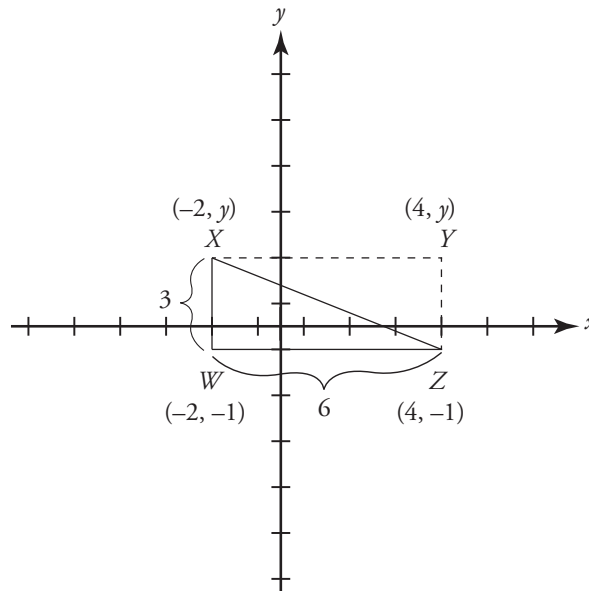
Notice that the length of WZ is 4 − (−2) = 6. If the area is 18 = 6 × w, then w is equal to 3. Now you have a right triangle with legs of 3 and 6. Use the Pythagorean Theorem: $3^2 + 6^2 = c^2$, or 9 + 36 = c^2. So, $c = \sqrt{45} = \sqrt{9 \times 5} = 3\sqrt{5}$.

12. **E** Order matters in this problem, so remember you do not divide; you multiply! For the first integer, you have 5 options. For the second, you have 4. For the third, you have 3; 5 × 4 × 3 is 60, which is (E).

13. **D** The percent increase in the CEO's pay was $\dfrac{\$50 - \$5}{5} \times 100\%$ = 900 percent. The percent decrease in the factory workers' pay was $\dfrac{\$20 - \$10}{20} \times 100\%$ = 50 percent. To find what percent greater 900 percent is than 50 percent, do the following: $\dfrac{900\% - 50\%}{50\%} \times 100\%$ = 1,700 percent, or (D).

14. **D** Divide the $9.4 million in private donations received by child safety organizations in September 1989 by the 38 organizations operating at the time. The amount is approximately $250,000.

15. **C** From the line graph, you see that housing aid groups aid groups took in about $300 million in private donations, and animal rights groups about $225 million. The ratio of $300 million to $225 million is 4 to 3.

16. **E** Identify the markers for September 1989 and October 1989 on the chart. The question is asking about the least percent increase between these two data points. So, begin by evaluating the data points. All of the differences between the data points for these two months are very similar; they all seem to have a difference of approximately 0.5. Because 0.5 is a lesser percent of a greater number, the least percent increase corresponds to the data point with the greatest numbers. Therefore, the correct answer is (E), *child safety*. Alternatively, find the percent increase for each of the answer choices by dividing the difference between the two points by the original, which in this case is the number for September 1989. The least percent increase is still (E), *child safety*, which is the correct answer.

17. **D** This is a pattern problem. The pattern has five digits: 06539. Divide 34 by 5, which gives you a remainder of 4. So the 34th digit will be the fourth in the pattern, which is 3.

18. $\dfrac{48}{7}$

First, solve for x using the equation $\dfrac{7y}{2x} = 7$. Cross-multiply to find that $7y = 14x$. Dividing both sides by 14 yields $\dfrac{1}{2}y = x$. Substitute this expression into the first equation to get $3(\dfrac{1}{2}y) + 2y = 24$. Combine the like terms to get $\dfrac{7}{2}y = 24$; multiply both sides by $\dfrac{2}{7}$ to find $y = \dfrac{48}{7}$.

19. **C** Plug In the Answers, which are the possible values of x. Start with (C). Find the average of 6, 8, 10, and 23, which is 11.75, which is in the correct range. Eliminate (A) and (B) because the question asks for the greatest possible value of x. Next, try (D). The average of 6, 8, 10, and 28 is 13, which lies outside of the range. The correct answer is (C).

20. **A** Plug In! To find the area of quadrilateral *ABDE*, find the area of right $\triangle ABC$ and subtract the area of right $\triangle EDC$. Make $a = 4$ and $b = 2$. Because $AB = BC$, you know that this triangle has a height and base that are both equal to 4. The area of *ABC* is $4 \times 4 \times \dfrac{1}{2} = 8$. The area of *EDC* is $2 \times 2 \times \dfrac{1}{2} = 2$. The area of *ABDE* is $8 - 2 = 6$. Plug In for a and b and find that (A) is the only one that works. Alternatively, to find the area of quadrilateral *ABDE*, find the area of right $\triangle ABC$ and subtract the area of right $\triangle EDC$. Both the base and the height of $\triangle ABC$ are a, so the area equals $\dfrac{1}{2} \times a \times a$, or $\dfrac{a^2}{2}$. Both the base and the height of $\triangle EDC$ are b, so the area equals $\dfrac{1}{2} \times b \times b$, or $\dfrac{b^2}{2}$. Therefore, the area of quadrilateral *ABDE* is $\dfrac{a^2}{2} - \dfrac{b^2}{2}$.

Section 6

1. **B original** and **D outlandish**

    Try working with the second blank first. The clues are that the fashions were *considered daring* and then *imitated.* Starting with the second blank, the sentence suggests that the fashions have changed from what they once were—in other words, daring. *Outlandish* is a good synonym for daring and it makes sense that, in the first blank, the fashions were *original* and then lost their impact because of excess imitation.

2. **D diverge**

    Take note of the time transition *at one time inseparable...now,* which indicates that the combined roles in Middle Eastern music are now not inseparable. You need a word that means "divide" or "separate." *Divulge* starts with the proper root, but its meaning is way off. Meanwhile, neither *retreat* nor *retrench* means divide, while *fuse* is the opposite of what you want. *Diverge* is the correct answer.

3. **A rebuked, D perfidy,** and **I expiate**

    Start with the second blank, which must mean something close to an act of "treachery." *Perfidy* means this. Since his contemporaries believed Kazan had committed treachery, they would have "harshly criticized" him, so the first blank means *rebuked.* For the last blank, he was able to achieve *atonement,* which is what *expiate* means.

4. **A soporific**

    The sentence requires you to figure out the effect that *tranquilizers usually have*, and this is provided by the clue in the later part of the sentence, when you read that the *abuse of these drugs results in a failure to induce the much-desired sleep*. You can infer that the usual effect of tranquilizers is to produce sleep. *Soporific*, which means sleep-inducing, is the correct answer choice. While *sedulous* might remind you of "sedative," it actually means hardworking.

5. **B preternatural, F preclude,** and **H consonant**

    The clue for the first blank is *are rejected by modern science in its attempts to find secular insights*. Otherworldly interpretations contrast the secular, and the best choice for the first blank is *preternatural*. There would be a paradox only if scientists could hold non-secular beliefs. Therefore, a good word for the second blank is *prevent*, and a good phrase for the last blank would be *in agreement*. *Preclude* is synonymous with *prevent,* and *consonant* is synonymous with *in agreement,* making these the correct answers.

6. **C conformity** and **E eccentricity**

    Try working with the second blank first. The clue is *none of the family members were fearful…of appearing or acting differently from other people*. Therefore, find a word for the second blank that means uniqueness. *Eccentricity* fits the bill. Considering the clue, *The Johnsons were not known for their*, the two blanks must be opposites. Eliminate *candor* and *vulgarity* based on the clue and the word choice for the second blank, and choose *conformity*.

7. **E** In the last paragraph, the author discusses the difficulties inherent in measuring intergalactic distances. He notes that scientists use a standard candle in combination with the inverse square law to measure those distances.

8. **C** The passage states in the third paragraph that brighter objects are closer than dim objects, so eliminate (A). The passage never specifies what scientists know about the age of astronomical objects, so eliminate (B). The first paragraph says that, according to Hubble's law, *objects farther away from Earth are receding faster than those closer*. This means that the farther object will travel faster, so (C) is correct.

9. **B** According to the last line in the paragraph, *By the inverse square law, galaxy B is ten times farther away than galaxy A, assuming, of course, that distance is the only factor affecting brightness*. Therefore, if interstellar dust affects the brightness of an object, the brightness of the object is affected, and the distance scientists measure may be inaccurate.

10. **C** According to the passage, *By the inverse square law, galaxy B is ten times farther away than galaxy A, assuming, of course, that distance is the only factor affecting brightness*. Therefore, assuming that all other factors affecting brightness can be known, we can conclude that the brighter of the supernovas will be closer to Earth.

11. **B** *Prozac lag* is a phenomenon for which there is currently no explanation, but neurogenesis may offer a solution. Choice (A) contradicts this. The passage offers *Prozac lag* as supporting evidence of a new theory, not disproving an old one, as (C) suggests, or disproving a new one, as (D) states. Choice (E) goes too far by discussing *unforeseen effects*. Choice (B) is the best option.

12. **However, patients suffering from depression only begin to experience mood elevation weeks after beginning treatment.**

    The second paragraph has five sentences, so this question has five answer choices. For an *unexpected observation*, a good place to start would be to check the transition words. The fourth sentence starts with the word *however*. While the effects should occur immediately, these don't occur until weeks after starting treatment. The answer is the fourth sentence.

13. **B edifying** and **F didactic**

    The blank describes Socrates's conversations. The clue is *Socrates's teachings have survived and continue to enlighten seekers of wisdom*, so the blank must mean instructional. *Edifying* and *didactic* are the closest in meaning. *Tedious*, *grating*, *inspiring*, and *rousing* could all be used to describe Socrates's conversations, but they do not match the clue.

14. **D satiate** and **F allay**

    You would expect *the colossal meal* to fill someone up, but the sentence says that *failed to…her voracious appetite*. Thus, she was not full, and the meal failed to satisfy. *Satiate* and *allay* are the best match. *Cadge* and *mendicate* mean the meal begged her hunger. *Exacerbate* and *provoke* go in the wrong direction.

15. **B iridescent** and **D pavonine**

    The clue for this sentence is *the lovely rainbows they produce*, which suggests that the blank should be filled by a word meaning colorful. Both *iridescent* and *pavonine* mean exactly that. Even if you don't agree that the blank necessarily refers to rainbows of color, the missing word does have to agree with *beautiful* due to the transition word *and*, and none of the other four options does: *anodyne* means eliminating physical pain, *monocoque* means constructed in one piece, *parietal* means college-related, and *saturnine* means gloomy.

16. **B cauterized** and **E inured**

   The clue for this sentence is *callous,* so the blank must mean "used to," or "didn't notice." Choices (B), *cauterized,* and (E), *inured,* mean this. Choice (F) is incorrect because he didn't notice the violence more, but rather noticed it less.

17. **D** The conclusion of the argument is that the old formula for Megapower contained natural kiwi extract, while the new formula does not. The evidence is that Tasmania suffered a decrease in its kiwi exports. The assumption is that Megapower is not getting kiwi fruit from Tasmania. Choice (D) strengthens the argument by pointing out that kiwi imports have fallen in the country that produces Megapower, which would reinforce that assumption that the manufacturer is not getting kiwis from Tasmania. Choice (A) would weaken the argument by providing a potential alternate source for kiwi fruit. Choice (C) weakens the argument by providing evidence that the manufacturer of Megapower could be getting kiwi fruit from another source. Choices (B) and (E) are not relevant to the conclusion.

18. **C** While the word *promulgated* can take on the meanings given in (A), (B), or (C), within the context of the sentence it is clear that Courbet is taking a stand on what he believes art should be. Therefore, (C) is closest to the correct meaning.

19. **The argument has been made that the painting struck a blow for the independence of the artist, and that since Courbet's work, artists have felt freed from the societal demands placed upon their work.**

   While the rest of the passage enumerates Courbet's ideas on painting, only this sentence points to the effect that Courbet's work may have had on other artists when it states that *since Courbet's work, artists have felt freed from the societal demands placed upon their work.*

20. **A** According to the passage, Courbet broke with convention by *striving to do something strikingly original.* Only (A) provides that sense of defying a convention to do something original.