Answers and Explanations

Section 1

1. C The passage begins, "Musical notes, like all sounds, are a result of the sound waves created by movement." The author then goes on to talk about musical notes and how they illustrate properties of sound waves. Choice (C) captures this idea.

2. A Pitch is determined by the frequency of the sound wave. This eliminates (B) and (E). Choice (C) seems to refer more to the intensity, so eliminate it too. The final sentence says that pitch can be described either in numbers or in letters, so eliminate (D). That leaves (A), the correct answer.

3. B The passage states that Langston Hughes "persuaded her to continue her education in the North." And the passage uses this fact to explain her transfer to Northwestern. This is what (B), the correct answer, suggests.

4. C The passage doesn't specifically say that Walker was writing poetry before she entered New Orleans University. Eliminate (A). Hughes recognized her talent, but he didn't create it, so eliminate (B). Hughes recognized her talent before she transferred to Northwestern, so eliminate (D). The passage, if anything, implies that Walker wrote poetry for some time before publishing anything, so eliminate (E). The passage makes reference to her parents' occupations and encouragement, implying that they had an influence on her decision to become a poet.

5. C The author is poking a bit of fun at the Ungers, so eliminate (A), (B), and (E). His tone is more playful than downtrodden, so the answer is (C).

6. D The "Chicago beef-princess" suggests the wider high-class social world in Chicago. When one thing stands in for another, it is a metaphor. The answer is (D).

7. A Even if you do not know the definition of *fatuity* you can still get this question. John is going from Hades, which we can assume is hot, to Boston. He will probably not need the light suits and fans. The answer is (A).

8. B We know that John does not feel rejected, because he says he knows he will always be welcome at home. Eliminate (A). On the other hand, he does feel something negative, or he wouldn't cry. Eliminate (C) and (E). The handshake and the fact that John's tears are not mentioned until he has turned away from his father suggest that he is composed. The best answer is (B).

9. C If you were leaving home (and you were crying), why would you stop and look back? Most likely you would do so because you were sad to leave and wanted to get one last look before you went. Which of the answer choices matches this sentiment? Choice (C) does. The meditation on what the sign says serves to emphasize the quaintness of the town, of which John will no longer be a part. The other answers rely on your being distracted from the main emotions of the story.

10. E Hades is hell in Greco-Roman mythology. Midas represents wealth. Unger resonates with the hunger the family feels for the wealth and prestige of the North. In other words, the names suggest that the story uses the experiences of this one family to represent a larger situation. It is an allegory, choice (E).

11. C *Infused* is used to mean that his work was filled with the experiences he had in Manchuria. Eliminate all but (B) and (C). *Saturated* has something of a negative tone, and the author praises Abe's work, so eliminate (B). The answer is (C).

12. E The metaphorical use of orbit and gravitational pull is used in conjunction with the negative words "controlled" and "oppressive." Abe's work is not controlled by oppressive forces. Eliminate (B), (C), and (D). Choices (A) and (E) are similar answers, but (E) better captures the author's intent.

13. D Abe forged a medical certificate, so we know he was not actually sick. You can eliminate (A) and (B). The passage makes no reference to Abe helping the sick and injured, so eliminate (C). The sentence in the passage says that the forged medical certificate allowed him to avoid

fighting. Choice (D) corresponds with that meaning. Choice (E) can be eliminated because you don't know what his intentions were for after the war.

14. E Even if you don't know the defintion of *apocalyptic*, you probably know that it is a negative word. Eliminate (D) (*exhilarating* is a positive word). There is no reference to nuclear weapons in the passage, so eliminate (A). There was *famine*, and Abe seems to have been *strongly affected by the loss of his father*, but neither of these answers is specific enough. Only (E) expressly answers the question.

15. A This question is a little bit more difficult than some vocabulary questions because you have to look in a few different places. The third paragraph, where the word appears, tells you that the avant-garde group was political and that Abe worked in various genres. The fourth paragraph refers to his earlier work, which was the work in the third paragraph, as "experimental and heavily political." Since one of these words is an answer choice (A), it is the best answer.

16. C This question basically asks you to distinguish between the author's opinion and the basic facts of Abe's career. Choices (A), (B), and (E) all contain evaluative opinions, so eliminate them. The author expresses strong opinions about the themes *furusato* and the emperor, but never presents any facts about their influence on Japanese literature in the world. The best answer is (C). The author presents it as a known fact that young Japanese artists after World War II were interested in Marxism.

17. B As always, go back to the passage to look for the context of the phrase. Shortly after the phrase appears, the author says that readers have wrongly decided that *Woman in the Dunes* was Abe's masterpiece. The author also refers to the lack of translations of Abe's earlier works. The answer that best summarizes these two things is (B).

18. D The author's purpose in paragraph 4 is to suggest that too much attention has been given to Abe's later work, as you just determined in question 17. So the answer cannot be (A). There is only a brief comparison to Abe's contemporaries, so (B) is too specific. (E) is not factually correct, since most of the work the passage discusses was produced in Japan. You are left with (C) and (D). (C) is too neutral; this author is opinionated. She/he does not suggest that Abe's later work is bad, but rather that his early work also deserves attention. Choice (D) is the best answer.

19. B The author is most interested in literary works. There is no reason to suspect that the author is an artist or writer. The tone is critical and scholarly. (B) is the best answer.

20. D The author of this passage does express many strong opinions, but not in regard to Marxism. You can therefore eliminate both (A) and (B). If anything, she/he is more positive than negative about the influence of Marxism on Abe's work. Eliminate (C) and (E), which imply a negative bias. The answer is (D).

Section 2

1. C With a calculator this problem is straightforward enough, but you do not need a calculator to solve this problem. The wording is a bit tricky, but to find the percentage of 75 that 12 represents, you would place 12 over 75. This can be simplified $\frac{12}{75} = \frac{12/3}{75/3} = \frac{4}{25}$. Percent means "of 100," so if you change the 25 in the denominator to 100, you'll have your percentage in the numerator. $\frac{4}{25} = \frac{4 \times 4}{25 \times 4} = \frac{16}{100}$. This is answer (C).

You could also have set up an algebraic equation, and then cross-multiplied to find the answer.

$$\frac{12}{75} = \frac{n}{100}$$
$$(12)(100) = (75)(n)$$
$$1200 = 75n$$
$$\frac{1200}{75} = \frac{75n}{75}$$
$$16 = n$$

2. D If a circle is inscribed in a square, then the circle is inside the square. You can find the length of the square's sides using the area formula for a square:

$$A = s^2$$
$$36 = s^2$$
$$6 = s$$

It might help if you draw a circle inside a square to visualize the next part. The side length of the square is the same as the diameter of the circle. Draw a diameter and you'll see that it's the same length as a side.

This is a key relationship that the two figures share. Once you know the circle's diameter is 6, its radius must be half that, 3. This radius can be placed into the area formula for a circle:

$$A = \pi r^2$$
$$A = \pi(3)^2$$
$$A = 9\pi$$

Choice (D) is correct.

3. B First, you are looking for a line with a positive slope, which means that it rises as you go from left to right. This eliminates choices (A), (D), and (E). Second, a slope of 1 means that it rises as much as it runs (it goes up at the same rate that it goes over). A line with a slope of 1 will be halfway between a line that is completely horizontal and a line that is completely vertical. Choice (B) is that line, since the rise in choice (C) is too gradual.

4. C To answer this question, you have to determine how the series is generated. The numbers are increasing, so it is very unlikely that either subtraction or division is involved. The numbers increase, and note how fast the increase is. Addition can be ruled out since the increase from one term to the next is too great; simple multiplication is also unlikely. Look at the four terms closely, and you'll notice that each number is the square of an ascending integer. The series is one squared, then two squared, then three squared, and so forth. This series then is generated by squaring the integers. Therefore, the eighth term is eight squared, 64. Choice (C) is correct.

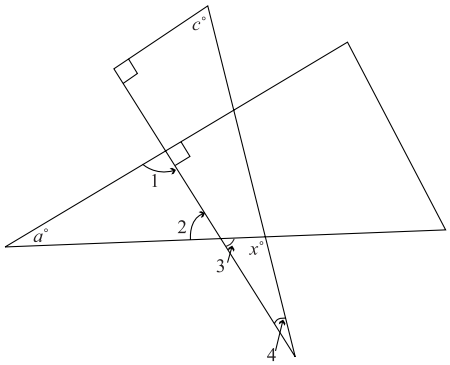
5. B The area of a parallelogram is the height times the base. You do not know the height, but you can determine it by using the geometry of a triangle. If you drop a perpendicular from the top left corner to the opposite side (which you will call the base), then you have a triangle whose height is the height of the parallelogram. Measures of adjacent angles of parallelograms sum to 180, and so the bottom left-hand angle measures 60° (this is because the bottom right interior angle is 120°, and $180 - 120 = 60$). Surprise! This gives you a 30-60-90 triangle, and you can determine the height. Since the hypotenuse is $2\sqrt{3}$, the height is 3. The base is 6, and so the area is:

$$A = bh$$
$$A = (6)(3)$$
$$A = 18$$

That's choice (B).

6. A To find the reciprocal, switch the numerator and the denominator. Once you've flipped the fractions over, look for a fraction where the numerator is greater than the denominator and where the difference between the two is greatest. Choices (A) and (E) look like the best candidates. The reciprocal of A is $4\frac{1}{2}\left(\frac{9}{2} = 4\frac{1}{2}\right)$, and the reciprocal of (E) is $4\frac{1}{3}\left(\frac{13}{3} = 4\frac{1}{3}\right)$. Choice (A) is the greatest.

7. E Another sketch with more of the angles numbered is helpful here.



Angle 1 is 90° because its measure and the measure of the angle adjacent to it must sum to 180. Couple this fact with the given information $a = 60$, and it means that the measure of angle 2 is 30° since the measures of the angles in that triangle must sum to 180.

Angle 3 is also 30° since it is vertical with angle 2. If you can find angle 4, you could figure out angle x since you will have two of the three angles on that small triangle. To find the measure of angle 4, look at the big triangle with angles 4, c, and the right angle. Since a right angle is 90° and $c = 50$, the measure of angle 4 is 40° since the measures of the angles in the larger triangle must sum to 180. If the measure of angle 4 = 40, and the measure of the angle 3 = 30, then

$$180 = m\angle 3 + m\angle 4 + m\angle x$$
$$180 = 30 + 40 + x$$
$$180 = 70 + x$$
$$110 = x$$

Choice (E) is correct.

If you had no idea how to answer this question, you might have noticed that the figures were drawn to scale. Looking at x, it certainly looks greater than 90°. Choice (A) is highly unlikely as an answer, and (E) would be your best guess since it's the only choice greater than 90°.

8. E A problem like this takes a careful step-by-step execution, but fortunately nothing else is needed.

$$\left[\left(2^2 + 2^2\right)^{-1}\right]^{-2} = \left[\left(4 + 4\right)^{-1}\right]^{-2} = \left[\frac{1}{8}\right]^{-2} = \frac{1}{\frac{1}{64}} = 64, \text{ choice (E).}$$

9. C Here you need to take care to read the chart correctly. Each complete box represents 150,000 widgets. Company B made one-and-a-half more boxes. That last box is not a full box, as you can see by its size and by the dashed lines on the right end. Choice (B) represents one box worth of difference (150,000 widgets), while choice (D)represents two complete boxes of widgets as the difference. Answer (C) is correct, since it shows a difference in production of one-and-a-half boxes (150,000 widgets + 75,000 widgets = 225,000).

10. A Since you are told that x is odd, you should suspect that the answer would have something to do with being odd or even or neither. That makes choices (A) or (B) the prime suspects. x cannot be even because an even number raised to an even power must be even. Try giving x an odd value, like 3. $x^x = 3^3 = 27$. This satisfies the facts given in the problem, since 27 is an odd number, so choice (A) is the answer.

11. E Do not be unnerved by the newness of this concept. All that you need to know about factorials is provided in the explanation. So be a good test-taking robot: Take the numbers they give you and feed them into the formula.

$$\frac{6!}{3!} = \frac{6 \times 5 \times 4 \times 3 \times 2 \times 1}{3 \times 2 \times 1} = 6 \times 5 \times 4 = 120, \text{ choice (E).}$$

If you don't get flustered (and no self-respecting test-taking robot ever does), the problem is quite straightforward. You just apply the concept of factorial and then multiply to find the answer.

12. B Here replace x with three, and then solve:

$$f(3) = (3!)^2 = (3 \times 2 \times 1)^2 = (6)^2 = 36, \text{ answer (B).}$$

13. A This one's the toughest factorial problem, but a clue is provided by the answer choices. Most of the answers are in terms of y. Therefore, you are probably going to have to manipulate $\frac{y!}{x!}$ so that only y's remain in the expression.

To do this, let's replace the x's with y's. Since, and y and x are integers, $x! = (y + 2)!$. Substituting this into the problem:

$$\frac{y!}{x!} = \frac{y!}{(y+2)!} = \frac{y!}{(y+2)(y+1)y!} = \frac{1}{(y+2)(y+1)}$$

This is choice (A). You could also solve the problem by picking values for the two variables that are consistent with $y + 2 = x$, and then plugging the values into the factorial fraction and also into the answer choices. If only one answer choice matches the factorial fraction, then you have the right answer. If two answers match, then pick another set of values for the variables and repeat the process.

14. A You will probably recall that the determinant of a matrix is found by cross-multiplying. Since you know the end result is -6, all you need is the right set-up and the proper computation:

$$\begin{vmatrix} n & 4 \\ 5 & -7 \end{vmatrix} = -6$$
$$(-7)(n) - (4)(5) = -6$$
$$-7n - 20 = -6$$
$$-7n - 20 + 20 = -6 + 20$$
$$-7n = 14$$
$$\frac{-7n}{-7} = \frac{14}{-7}$$
$$n = -2$$

15. E First note that the question asks which statements *must* be true. Some statements could be true under the right conditions, but if they are not always true, they are not going to be the right answer for this problem.

Now, from $p + q = 2q + 6$, you can determine: $p = q + 6$ by subtracting a q from both sides. If p is odd then q is odd, and if p is even then q is even (since an odd plus an even is odd and an even plus an even is even). But neither of them has to be even or odd. Thus I and II are not

necessarily true. The same is true for III, since p and q could both be odd, which would make their product odd. Choice (E) is the answer, since it's the only choice left standing.

One last point: this question should have been answered on the second pass. Once you saw the Roman numerals, you should have realized that it would take some time to answer, and that waiting until the second pass would allow you more time to get to questions that might take less time.

16. B Look at the graph and you'll see that there are three distinct regions in which x is greater than zero:

(1) x to the left of negative three
(2) x between negative one and one
(3) x to the right of three

Once your eyes give you that information, it's up to your brain to decipher the wilderness of greater than/less than signs and find the answer that describes these three regions correctly. Choice (B) does this.

17. E Since the question asks which number must be in Box E, the conditions must only allow for one number to be in Box E. There is only one prime number, 11, and so it goes in Box B. 9, 12, and 15 are evenly divisible by three, and so they go in A, C, and D. You don't know what order, they are in, but it doesn't matter. That leaves 16 for Box E, which means choice (E) is the answer.

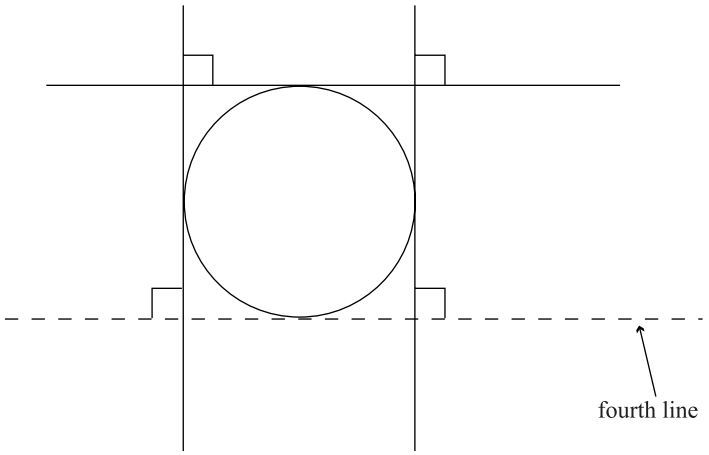
18. D Since B, D, E, and H are all midpoints on their respective lines, the rectangle is divided into four equal rectangles. The diagonal $\overline{CG}$ divides the two smaller rectangles it traverses into halves. One-half of each of these two rectangles is shaded, so a total of one of the smaller rectangles is shaded. Since the smaller rectangles are equal in size and there are four of them, one-fourth of the larger rectangle is shaded or 25%, choice (D).

19. D Since n is the same thing as n^1, you are looking to raise $n^{\frac{-p}{n}}$ so that the resulting exponent is 1. Remember that when you raise a number to an exponent, you multiply the exponents. What multiplied with $\frac{-p}{n}$ yields one? The answer is its reciprocal, $\frac{-n}{p}$.

$\left(n^{\frac{-p}{n}}\right)^{\frac{-n}{p}} = n^{\left(\frac{-p}{n}\right)\left(\frac{-n}{p}\right)} = n^1$. So (D) is the answer.

20. A A straightforward way to start this problem is simply to start with the first prime number. 2 and 3 cannot be *n*, but 5 could since 3, 5, and 7 could form a prime triplet. Continuing on with the prime numbers to fifty, there is not another prime number whose closest primes are two more and two less than itself. Thus the answer is (A).

21. B If a geometry figure is described but not drawn, it's always a good idea to sketch the figure yourself. Draw a circle and then one tangent line. Next draw a second tangent line that is perpendicular to the first. Now draw a third tangent that also is perpendicular to the first. Your sketch can only look like this:



Your lines could be rotated around, but the interrelationships of the tangents must be the same. The only place to draw a fourth tangent line that will be perpendicular to two other tangent lines is at the bottom of the circle.

Does this figure look familiar? It should, since it has the same appearance as the first geometry problem in this section, question 2. You have drawn a circle inscribed in a square. The fact that it is a square could clue you in to the fact that there are two sets of parallel lines. You might also recall from your geometry class that two lines that are perpendicular to the same line are parallel to each other. This means that both sets of tangent lines across the circle are parallel. Either way, the answer is (B).

Choice (D) is close, but the circle is inscribed in the square, not the other way around.

The fact that questions 2 and 21 employ the same figure shows you how two questions can use the same figure but vary greatly in terms of difficulty. A point to ponder is, "How did the test-takers make the last question harder?" First and foremost, no figure was included. This should spur you to draw any figure that is not given to you, and make a hard problem a lot easier to visualize and answer.

Section 3

1. E You should always take a close look at underlined pronouns in identifying sentence error questions. "Registered" in this sentence is an adjective, and "who" is a pronoun that represents "voters." Because it is the subject of the verb, "who," rather than "whom," is correct. In addition, there are no other errors in this sentence. So, the answer is (E).

2. C This sentence lacks parallel structure. "Debating" in the first part should be matched by "setting" in the second part. The answer is therefore (C).

3. B There's an error in diction here. "Affects" is a verb; "effects" is the noun form. "Side effects" is the desired phrase. Choice (B) is the answer.

4. B The error here is difficult to detect. The phrase *over the last decade* indicates that the growth is still continuing. This is also indicated in the present tense form of *employs* (D). Thus the first verb should be *has grown* instead of *had grown*. Choice (B) is the answer.

5. C Here is another case of missing parallel structure. This is a common mistake in this section. *Reading widely* and *making herself* need to be matched by another gerund in part C, such as *conducting sophisticated research*. The answer is (C).

6. E Using "one" might sound awkward to one, but it is not incorrect. Nor are there any other errors. The answer is (E).

7. D The tenses of the verbs in this sentence are not consistent; this is another favorite error in this type of question. *Has undergone* should be matched with *has exploded*. The answer is (D).

8. D In comparing two things (films in this case), one should use the comparative case of an adjective and not the superlative. *Best*, choice (D), is superlative and not comparative (*better* would be correct), and so it is incorrect.

9. C You *agree with* a noun, and *that* a phrase. (A) is idiomatically correct. There is no error in (B). You may use *reasonable for* with the construction here (subject + infinitive). No error there. *To not acquiesce* is acceptable for spoken speech, but in written language it should be *not to acquiesce*. There's the rub. The answer is (C).

10. C A country (Canada) requires the pronoun *it*, not *they*. The problem is therefore in choice (C).

11. E This sentence is unnecessarily wordy. *Having published her first novel, the author* is a lot snappier and more direct. The answer is (E).

12. D Here, *despite* is not used in a grammatically correct way. *Despite the fact that* is grammatically correct, but it is unnecessarily wordy and it is not appropriately joined with a semicolon. How about just *but*? That's the answer (D).

13. C This sentence might have sounded okay to you, but it has a misplaced modifier. These are very popular mistakes in the sentence correction questions. The phrase *after he had worked on his serve for a few days* modifies the noun *player*, so player must be right next to it. Only (B) and (C) accomplish this. Choice (B), however, changes the sense of the original sentence. The answer is (C).

14. C In sentence construction parallel parts of a sentence should have parallel forms. In this sentence the verbs *portray* and *reveal* are parallel, but in the original sentence construction they are not in parallel form. Choice (C) corrects this mistake.

15. B This is another favorite of the test writers: Any time you have "not only" you need to signal the contrasting phrase with "but also." The answer here is therefore (B).

16. A There is no error here. The answer is (A).

17. A There is not a grammatical error in the underlined portion, and none of the alternatives improve upon the original. Because you do not repeat the subject, there is no comma needed before the underlined portion. Were you to choose answer (C), you would need to add a comma. Choice (A) is the answer.

18. D Here the error is logical rather than grammatical per se. The first part of the sentence emphasizes sympathy, but the second part focuses on negative human qualities. You need a contrasting coordinator. That leaves (D) and (E). (D) is the better choice.

19. E It was not because Pancho Villa's raid was *part of the tumult of the Mexican revolution* that it *prompted a retaliatory expedition*. *Therefore* is misused. Simply delete it and you have a correct sentence. The answer is (E).

20. A There is nothing grammatically wrong with the underlined portion, and none of the other choices improve on the wording of the sentence. (A) is the best choice.

21. E Right away, you should notice two sentences in passive voice and think about making them active. Only (D) and (E) do that. (D) includes an imprecise *−ing* verb. The test writers love to throw these around. Sometimes they are the right answer, but you should always scrutinize them. Here (E) is a much sharper sentence.

22. A Doesn't sentence 2 seem too specific? It is really an explanation for why the men couldn't use their limbs. It should therefore follow sentence 4. The answer is (A).

23. D What is the logical connection between the two sentences? The first deals with the highest trip. The second deals with the largest balloon. *Now* has nothing to do with that. Neither does *in the nineteenth century*. You don't want to begin with either of these. *Moreover* represents paragraph 2 as an extension of the ideas in paragraph 1, which is also inaccurate. The easiest thing to do is simply get rid of now, (D).

24. C Sentence combination is huge in this section. This example is trickier than most. It already has an *and* in the first sentence, so if you use *and* again your sentence will start to sound like a run-on. Here, too, the *−ing* verb is imprecise. *Which* should really go very close to the noun it modifies, so eliminate (A). *But* implies a contrast, when all of these ideas are similar, so you can eliminate (E). Go with the semicolon (C).

25. D *All of whom returned safely* is not a complete sentence. It modifies "passengers" in the preceding sentence. Only (D) addresses that major problem!

26. E What's missing in this sentence is *where*. As it stands now, it implies that *literacy program* is the direct object of *working*. Choices (D) and (E) correct the error, but (D) makes undesirable changes to the verb tenses. (E) is the best answer.

27. B *That had automobiles* should not be separated by commas because it is an integral part of the category being described, not an added description. But it isn't correct in written English to write *people that*. It has to be *people who* (or *people whom* if what follows positions the people as the object of a verb). The answer is (B).

28. D The sentence as it stands is a bit of a disaster. It sounds like a run-on: it just goes on and on like the Energizer Bunny. So what you will want to do is make it more direct, showcasing the important parts and subordinating the descriptions that are really secondary. You also need a comma after *It is hard to believe*. Start with the easiest thing, and eliminate (A) and (C) off the bat. Which of (B), (D), and (E) makes the sentence more direct? Definitely not (E). Choice (B) gets rid of the second comma/and combination, which could be good. But is a colon really in order here? No. The best answer is (D).

29. A This is a little tricky because the repetition here does serve a purpose; it isn't just extra wordage that got in the author's way. Basically, the sentences are a list. When you have clauses that form a list (or other things requiring lots of words and/or punctuation), you separate them with semicolons rather than commas. (A) looks good. All of the other answers, except (D), change the sense of the original ever so slightly. (D) could be possible if it had *and* before the last clause, but (A) is still better.

30. B While it would be possible to add a comma after *convenience*, it doesn't make much sense to add one after *necessity*. Changing *you live* to *one lives* is possible, but not required. So is adding *Desert*. The comma after *apparently* isn't strictly required, but it is desirable. The only absolutely necessary change is to replace "there" with "they are" (choice B). "There are" might have been more difficult to rule against (though still incorrect), but the sentence doesn't even say *there are*; it just says *there*.

Section 4

1. A What is the name of the kind of talk that is delivered at a funeral? *Eulogy*. If you know this, the answer pops out at you. If you did not know it, consider each of the choices in their turn. *Epigraph* is a quote at the beginning of a piece of writing. *Eponymy* is something with the same name as something else. *Epitaph* is what is written on a gravestone. That leaves (A) and (B). *Elegy* is a poem written in memory. You don't "give" a poem. That leaves (A), the correct answer.

2. C On this dual-blank sentence, let's do the first blank first since we know that the blank was *an encouragement to the rest of the team*. Good spirits would be an encouragement to the rest of the team. You can eliminate (D) and (E). As for the second blank, what does a string of defeats do to a team? It discourages them. (A), *elated*, does not match this. Nor does (B), *inundated*. But (C), *dispirited*, fits well and you've already eliminated (D) and (E). Choice (C) is the best answer.

3. B You might not know what *resorted* means, but if you know it's a negative word, you can make an educated guess. Which of the answer choices is also a negative verb? (A), (C), and (D) are not. (E) is not a good answer because *swindling* has nothing to do with campaigning. Choice (B) is the best choice.

4. E The second half of the sentence gives more clues, so you ought to start there. What are cats most likely to do to dogs? Avoid them, probably—which will lead you to (E), the correct answer. But for good measure, let's eliminate the other possibilities. For a cat to *undermine* a dog isn't logical. Being undermined is something that happens to humans or projects, so you can definitely eliminate (D). One could say that a cat *enticed* a dog to do something, but it isn't good usage simply to say that the cat enticed the dog. Eliminate (A). Is it likely for a cat to gracefully *apprehend* a dog? No. Eliminate (C). The only possibilities left are (B) and (E). A cat might possibly defeat a dog in battle, but use the other clues. Defeat and "gracefully" don't go well together, and it doesn't make sense for a battle to happen while the cat is creeping across the lawn. Eliminate (B). The answer is (E).

5. A Attack the second blank first. The most likely adjective to describe attention will be something like *undivided* or *rapt*. (A), which includes *rapt*, is the answer. (B), which includes *spellbound*, is also possible. But *pointed* anecdotes doesn't make sense, so the answer is (A).

6. E You know the word is going to be negative: both *bogged* and *contentious* tell you so. Eliminate (B). Now think that the word is basically going to mean mess. You can eliminate (A) and (C). Conundrum is a confusing problem, not really a messy situation. (E) is the best answer.

7. B Here the first blank seems more approachable. The reference to a clear leader indicates that the outcome was known. Eliminate (A) and (E). For the second blank, the clue is that the leader *misstepped* and so rest of the competitors must have gotten a chance at the title, but they weren't assured a victory. Eliminate (D) and (C). The answer is (B).

8. D Consider the first blank. The word *though* indicates that the drug *was intended to be beneficial* but ultimately was not. Do any of the answer choices mean not beneficial? (A), (D), and (E) do. How would the medical community respond to a bad result? Ostensibly they would think that a bad result was bad. That eliminates (A) and (E). This leaves (D).

9. B A life that only lasts 24 hours is what in comparison to a normal human life? It is short. Which of the answer choices contains the notion of shortness in its meaning? (B), *ephemeral*, does.

10. E What is a species likely to do in an environment? It either grows in number or diminishes in number. Each of the first words, except in (B), could mean one of those things. Eliminate (B). When you discover that there is an abundance of food, you know that the first word will suggest that the kangaroos increased in numbers. Eliminate (A) and (D). Now you need the second part of the sentence. To grow in numbers, the kangaroos will need an absence or near absence of predators. Eliminate (C). You are left with (E).

11. C The best clue in this sentence is "fears." Citizens with fears can only be *concerned* or *alarmed*. That leaves (B) and (C). It's not particularly logical to say that a speech is designed to *ignore* something. On the other hand, it is common to use *assuage* with *fears*. The best answer is C.

12. A Let's attack the first blank. If the female is a fencing champion then she must be skillful with her *rapier* (her sword). Which of the first answer choices matches skillful? Choices (A), (B), and (E) do. (C) is possible but not likely. As for the second blank, the conjunction *but* indicates that her skillfulness in fencing is in contrast to her lack of skill in other sports. Which of the remaining second answer choices matches with this pre-guess? Only *awkward*, choice (A), does.

13. B There is a contrast drawn in the sentence between receiving accolades—praise, awards—and Jane Goodall's initial standing in her field. She must have met with a lack of support or outright disapproval. Eliminate (E) because it is illogical. Eliminate (C) because it goes with, rather than against, accolades. An *acolyte* is someone who assists a clergyman, so you can eliminate (A). You are left with (B) and (D). A *charlatan* is a fake, an incompetent. If the sentence said, "Some people thought she was a ——," *charlatan* might work, but it says she actually was "a —-." She couldn't have been a fake and later gotten awards. Eliminate (D). You are left with (B), a *maverick*, an independent thinker, a dissenter, a pioneer.

14. D This sentence is contrasting the views of Alston and Mario (the conjunction *but* clues you into this fact). Alston thinks that the lecture was *impressive*, which probably means smart, accurate, logical. Mario's view is in contrast to this. You can eliminate (A) and (C). *Recondite* is not likely to be a word to describe a lecture, so eliminate (B). You are left with *specious* or *fictitious*. *Specious* means logically false; *fictitious* comes from fiction, and presumably the philosopher didn't tell a story but rather made an argument. Choice (D) is the best answer.

15. A If you know that *insinuation* is a negative word, you can guess that the first blank will describe a logical response to a negative thing. *Balk* is a common word in this situation, but if you don't know that use the process of elimination. You can eliminate (B) and probably (D) because they are not negative words. Move to the next blank. If the official's response is negative, it's most logical that he is accused of having something to do with the *economic woes*. Eliminate (C). That leaves (A) and (E) as the most likely answers. But you don't "rile" *at* something; it's not good usage. Eliminate (E) and you are left with (A).

16. D The author is speaking generally in this first paragraph. Global warming and species extinction are two big, general problems; he refers to them in a positive light at "maintaining global climate and genetic resources." "Genetic resources" refers diverse species of plants and animals, choice (D).

17. E The author mentions that Los Amigos is relatively pristine, and that the rainforest is facing threats. Eliminate (A) and (B). He isn't talking in the passage about restoring the rainforest, but preventing future damage. Eliminate (C). He does not say that every other part of the rainforest is already destroyed beyond repair. Your logic should tell you that. Eliminate (D) and you are left with (E), the correct answer.

18. A First go back and get the context of the use of this phrase. It refers to land being set aside for conservation use. The only possibility is (A).

19. D This is a difficult question because it requires you to infer the answer. The best way to do that is to eliminate the least likely answers and then see what's left. The passage tells you that the agreement was "the first long-term permanently renewable conservation concession." There are two references to time in this sentence, so the answer must have to do with time—that leaves (B), (D), and (E). The author isn't really interested in the legal aspects, though, so eliminate (E). Because he includes both "long-term" and "renewable," the agreement probably wasn't the first contract that was simply one or the other. Eliminate (B). That leaves you with (D), the correct answer.

20. C This is a question that you should be asking yourself as you read through the passage. The passage begins by discussing the importance of conservation efforts in Amazonia and then links the work at the Los Amigos watershed with this goal. The correct answer will contain both of these things. (A) is too general. (B) isn't accurate—he doesn't focus on eliminating bad things but on continuing good things. (C) sounds good. (D) is incorrect because the passage is not primarily about the Peruvian government. (E) points to one issue that the passage discusses but lacks many of the other issues the passage discusses. (C) is the best answer.

21. D This question calls for a little nuance. He does advocate for his project, but does not position it against other projects. Eliminate (A). (B) is too general. (C) is not accurate—he does not condemn the government. (D) sounds good. (E) uses language that is too strong—he is not a zealot, but a scientist making his case in calm, rational language. (D) is correct.

22. E The author positions his project as complementary to other projects. These scientists are examples of the other amenable projects. The answer is (E).

23. E This is a tricky answer because the right choice is the one you'd least expect. The author focuses on working with plants in the watershed, but in the last word of the passage mentions an "herbarium," which through context clues and word study, you can guess means a laboratory where plants are grown. Eliminate (A). The author mentions studying "human-plant" interactions in paragraph 6. Eliminate (B). Somewhat surprisingly, the author is in favor of pharmaceutical use of Amazon plants, as he indicates in paragraphs 1 and 5 and implies in paragraph 6. Eliminate (C). (D) is obviously not the answer. You might think that because he focuses on naming, he means labeling, but in fact it is a scientist on another project, Robin Foster, who actually labeled plants. (E) is the answer.

24. B As always, first go back and read the section cited in the question. The sentence in which "providing names" occurs, mentions *communication about plants and the animals that use them*. You will recall that earlier in the passage, it was stated that one of the major projects in studying Amazonia was discovering new species. One hurdle for communication among scientists once a species is discovered is standardizing the name of the species. This is how "providing names" will *facilitate communication*. Choice (B) correctly points this out. (If you had difficulty with this question, notice that all the other choices mention issues not directly addressed in the passage. That is a strong indicator that an answer is incorrect.)

25. A The author's full argument goes, "To be informed, we must develop knowledge. To develop knowledge, we must collect, organize, and disseminate information. In this sense, botanical information has conservation value." The author is arguing that being informed is essential for conservationism, and so in this sense *botanical information has conservation value*. So even though (B), (C), (D), and (E) are all things the author might agree with, only (A) captures the meaning of the argument made here.

26. B You might confuse repeated use of the word watershed with an actual discussion of water pollution, but the author doesn't mention water pollution explicitly. The answer is (B). If you don't get this right away, you can arrive at it by eliminating the others. He does clearly mention all of the other choices.

27. C The author is talking about how his work at Los Amigos relates to other conservation projects, and how the Los Amigos area is related to other environmentally protected areas. Only (C) captures that meaning.

Section 5

1. C For every positive integer, there is a negative integer the same distance from zero. This means that there are an equal number of positive and negative integers. Therefore each set contains the same number of members, which is choice (C).

2. B Four sweaters cost p dollars, and so 12 sweaters at the regular price would cost $3p$ ($4 \times 3 = 12$). Since the sweaters are half-off, the 12 sweaters only cost half as much, $\frac{3p}{2}$, choice (B).

3. C This fraction looks complicated, but realize that the numerator and denominator are both fractions. You might then see that the numerator $\left(\frac{2}{3}\right)$ is less than the denominator $\left(\frac{4}{5}\right)$, and so this fraction is less than one. That eliminates (D) and (E) as possible answer choices. You have to simplify the fraction to find the answer, and since you're dividing fractions, remember to multiply by the reciprocal of the divisor:

$$\frac{\frac{2}{3}}{\frac{4}{5}} = \frac{2}{3} \div \frac{4}{5} = \frac{2}{3} \times \frac{5}{4} = \frac{10}{12} = \frac{5}{6}.$$ (C) is the answer.

4. E Here you just need to plug in and be careful. If $x = 3$ then $y = 1$ because

$$3y = x$$
$$3y = 3$$
$$\frac{3y}{3} = \frac{3}{3}$$
$$y = 1$$

If $y = 1$, then

$$y = \frac{10}{z}$$
$$1 = \frac{10}{z}$$
$$(z)1 = \left(\frac{10}{z}\right)(z)$$
$$z = 10$$

This is choice (E).

5. C $y = mx + b$ is the equation for a line, so the wiggly lines of choices (D) and (E) cannot be correct. A negative m means the slope is negative, so the line must slant down when viewed from left to right. That eliminates (A). The y-intercept b is positive, so the line must cross the y-axis above the x-axis. This is true of (C), so it's the answer.

6. A This problem requires a little careful decoding, but all the steps are straightforward. The first part of the order is 2 H-M, which are two medium hats. Usually the hats are \$12 each, so two would cost \$24, but since all medium-sized items are 25% off, the price is reduced. Twenty-five percent of 24 is 6, so together the two medium hats cost \$18 (\$24 minus \$6). The next part is 2 H-L, which is two large hats, and together

they cost $24. The last part of the order is 1 SH-M, one medium shirt, which costs $9 since it is 25% off ($3 is 25% of $12, the normal cost of the medium shirt). Adding up 18 + 24 + 9 = 51, answer (A).

7. A The task here is to solve for x. The test makers are betting that the square root symbol will throw you off a bit.

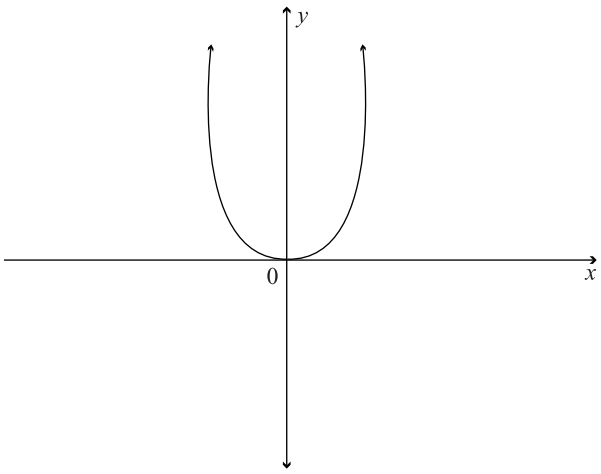
$$\begin{aligned} 5\sqrt{x} + 15 &= 30 \\ 5\sqrt{x} + 15 - 15 &= 30 - 15 \\ 5\sqrt{x} &= 15 \\ \frac{5\sqrt{x}}{5} &= \frac{15}{5} \\ \sqrt{x} &= 3 \\ x &= 9 \end{aligned}$$

Answer (A).

8. D Here there is no shortcut. We have to factor and then simplify.

$$\frac{x^2 - x - 12}{2x^2 + 2x - 12} = \frac{(x-4)(x+3)}{2(x^2 + x - 6)} = \frac{(x\text{-}4)(x+3)}{2(x+3)(x-2)} = \frac{x-4}{2(x-2)}.$$ (D) is the answer.

9. C The first thing to do is to have it clearly in mind what the graph of $f(x) = x^2$ looks like.



This shape comes about as a result of the x^2 term. When $f(x) = x^2$, the fact that all x values are squared makes every y value positive (keep in mind that $f(x)$ acts as the y value). This graph has no negative y values, but to find the right answer, it must now be rotated clockwise. This means rotating to the right.

Here's a good way to visualize this. Hold up your left hand, and make a bowl-shape with your fingers on one side and your thumb on the other. The tips of your fingers and thumbs should all be point towards the ceiling. This is your graph before rotation. Now take your left hand and shift it 90° to the right; in essence, snap your wrist down. The tips of your fingers and thumb should now be pointing to the right. Find the answer choice that looks like the position of your left hand. (C) is the answer.

10. E The correct ordered pair has to satisfy two conditions, $x - y > 2$ and $x + y > 4$. Let's start with the first condition and take it from there. In order for $x - y > 2$, x must be greater than y by more than two. This eliminates choices (A), (B), and (D). Now you have only two choices left to check the second condition, $x + y > 4$. If you add the x and y values of choice (C) together you get 4, but the value must be greater than 4. Choice (E) has to be the correct answer.

11. A The best way to approach a problem like this is to use one of the equations and solve for one of the variables in terms of the other. Then you can place that answer into the second equation.

This problem succumbs quite nicely to this strategy. Take the first equation and solve for y in terms of x. Cross-multiplication makes this simple.

$$\frac{x}{y} = \frac{1}{2}$$
$$2x = y$$

You can now substitute this information into $x + y$. Subbing in for y: $x + y = x + 2x = 3x$, which is (A).

12. B There are two main ways to approach this problem. You can come up with a snazzy algebraic formula, or you can go to the answer choices and start cranking in numbers. Let's use the crank method.

Whichever method you use, you must first determine how much Quentin paid for the three hot dogs. This is done by subtracting \$7.34 from \$10, giving you \$2.66. This is the price, including tax, of three hot dogs.

With the crank method, starting with the middle answer choice (C) often yields a clue, even if it's incorrect. Choice (C) has a hot dog at 86 cents. Add 6 or 7 cents sales tax to this, and then multiply by three. You get:

$$3(86 + 7) = 3(93) = 279$$

Tip

You can add the entire amount of sales tax per dollar, 7 cents, or you can take into account the fact that 86 cents is not quite an entire dollar, so Quentin might not owe the entire 7 cents sales tax. This might seem vague, but the question does allow for some wiggle room since it asks "which is closest to the price . . ." Whether you use 6 or 7 cents sales tax, the same answer works best both ways.

You know that Quentin spent $2.66, or 266 cents. Answer choice (C) comes out at 279 cents, which is 13 cents too many. This means that (C) is incorrect because it's too great. If (C) is too great, then (D) and (E) are even greater, so they must also be incorrect. This leaves (A) and (B). Try (B). If it also too great, then the answer must be (A). Here's (B).

$$3(82 + 7) = 3(89) = 267$$

This is only one penny off. If you use a 6-cent sales tax, it is only 2 cents off. (B) is closest to the price of the hot dog, so it's the correct answer.

13. D Since the triangles are congruent, you know that the bottom right angle on the left triangle is a right angle. You also know that the side opposite of b is $\frac{x\sqrt{3}}{2}$, and from this you can deduce that the side adjacent to b is $\frac{x}{2}$ by using the Pythagorean theorem. Here's what the computation would look like:

$$a^2 + b^2 = c^2$$
$$\left(\frac{\sqrt{3}x}{2}\right)^2 + b^2 = x^2$$
$$\frac{3}{4}x^2 + b^2 = x^2$$
$$\frac{3}{4}x^2 - \frac{3}{4}x^2 + b^2 = x^2 - \frac{3}{4}x^2$$
$$b^2 = \frac{x^2}{4}$$
$$b = \frac{x}{2}$$

The sides of this right triangle, then, are in the proportions of a 30-60-90 triangle. And since angle b is opposite the second largest side, its measure is 60°, choice (D).

14. C You can infer that the figure is a square since all the sides must be congruent because they are all formed by points equidistant from zero. To find the area of the square, you only need the length of one side. You can get this two ways: you can use the distance formula for two points or you can take a shortcut and realize that the square is cut into four 45-45-90 triangles by the y- and x-axes. The length of each non-hypotenuse side of these triangles is 2, so the hypotenuse must be $2\sqrt{2}$. This hypotenuse is also the length of the square's side, so place this value into the area of a square formula:

$$A = s^2$$
$$A = \left(2\sqrt{2}\right)^2$$
$$A = 4 \times 2 = 8$$

Choice (C) is the answer.

15. E The smallest percentage difference is going to be the year where the flu column and the cold column are closest. (The converse is not true for the greatest percentage difference.) Eyeing the chart is the fastest way to determine the answer. The values in the columns for 2000 look and are the closest, and so the percentage difference is the least. (E) is the answer.

16. D Cold cases (white bar) have to be greater than flu cases (shaded bar), so there are only two decades that could be the correct answer, 1970 and 1990, choices (B) and (D). In 1970, the number of cold cases is about twice as many as the flu (2,000 to 1,000), so the percentage difference would be 100%. This makes 1990, choice (D), the answer by default, but you can see that the percentage difference works out to about 25% since there were roughly 4,000 cold cases and 3,000 flu cases.

17. A You may want to save Roman numeral questions for the second pass! A judicious use of POE will help you out on this one, though. Looking at I, angles 6 and 12 are both formed by the same intersecting line, and they are congruent. Since I must be true, you can take this information and cross out any answer choices that do not have I in them. Surprisingly, this gets rid (B), (C), and (D). The answer is either (A) (I only) or (E) (I and II only). Since these are the only choices, you do not even have to worry about III. Check II, and if it must be true, then the answer is (E). If it isn't true, the answer must be (A). As it turns out, 2 and 9 are not congruent, so the answer is choice (A).

18. A This problem looks rather complicated, but the negative in front of the a simplifies it. If $-a^{-b^{-c}}$ is positive, then a must be negative and raised to an odd power. To get your head around this, consider that if a were positive, the entire expression could not be positive. So (A) *must be* true.

19. D The first thing to recognize here is that the figure is composed of three triangles, and since all the line segments are congruent, all the triangles are equilateral and congruent to each other. Equilateral triangles are all 60-60-60 triangles, and so both a and b are 60. Choice (D) is true.

20. C Since the boys cannot sit by seat 3, both girls always have to be sitting in seat 2 and 4. The boys have to be in seats 1 and 5.

If the first girl is in seat 2, then the second is in seat 4. If the first boy is in seat 1 the second boy is in seat 5. That is one arrangement. The boys could switch seats, and that is a second arrangement. The girls could also switch seats, and this would yield another two possible arrangements. That gives four total, (C).

21. E There is a little formula that can be used, and you can draw up a Venn diagram if you like, but if you keep your head you can reason your way through this problem. If 52 students are in neither class, then 98 students are in algebra or geometry. The question states that "73 are in geometry and 62 are in algebra," so that would be a total of 73 + 62 = 135 students. Since this number is greater than the number (98) of students you found earlier, the difference between 135 and 98 must be the number of students enrolled in both algebra and geometry. This difference is 37 (135 − 98 = 37), choice (E).

Section 6

1. B In reference to the discovery of DNA, the passage states, *the study of life could now be performed with more abstract methods of analysis.* (B) makes the same point, using the same key word, while all the other choices either go beyond what the passage actually states (e.g. (A), the passage does not say that the study of lipids and proteins became irrelevant; (C) basically says the same thing) or bring in topics not mentioned in the passage (e.g. (D), Mendelian genetics is not mentioned in the passage).

2. E The passage contrasts "wet and dirty" study of lipids and proteins with the information-based study of DNA. In this sense "wet and dirty" involves intensive laboratory work with things like lipids and proteins. It is not *haphazard guessing* (A). Choice (E) states this correctly, also drawing on language in the passage (*information-based*).

3. D The passage says that Saunders was a writer on Western topics who was widely read in the past. (D) fits with this. (A) does not. The passage does not say anything like (B), (C), or (E). Thus (D) is the best choice.

4. A The passage reads, many of the groups who popularized rock and roll consciously were attempting to emulate the work of blues greats such as B. B. King. Choice (A) is an accurate paraphrase of the information given in the passage.

5. C *Antecedent* means coming before. Even if you don't know the word, you can use word analysis to figure out that it has something to do with before. Don't confuse *ante-* with *anti-* (against). You can eliminate (D) and (E). *Referent* is a synonym for antecedent only in grammatical usage. Eliminate (B). You are left with *antebellum*, meaning before the war, or *causal*, meaning causing. *Causal* is more specific and more logical. (C) is the answer.

6. C The passage begins by describing the Seneca Falls convention as the first organized attempt for woman's voting rights (read the first sentences of the passage to see this). AWSA and NWSA came after Seneca Falls. (D) and (E) refer to information provided in Passage 2. Choice (C) is the answer.

7. A The passage states that the Seneca Falls conference did not have an *immediate effect* because the nation became *embroiled* in issues related to the coming Civil War. Knowledge of the dates of the Civil War will help you avoid confusing it with World War I. It was the Civil War, (A), that pushed the woman's voting rights movement to the background of the national consciousness.

8. B Here it is best to go back to the passage and clarify in your own mind the distinctions drawn between the NWSA and the AWSA. The NWSA, which the question asks about, focused their efforts on federal and constitutional issues, whereas the AWSA focused on state-level issues. So (B) is the correct answer.

9. B Don't be distracted by the wrong answers. Without even reading the passage, you could guess that the conflict between two organizations was resolved when they combined. The answer is (B).

10. D The author of Passage 1 doesn't have a very strong opinion, so you can eliminate (A) and (E). Now you need to decide if the author's opinion, however subtle, is positive or negative. It seems positive. For example, the author describes the work of the NAWSA as *important*. Thus the correct answer will be positive. That eliminates (B) and (C). The answer is (D).

11. A The first question is to determine what the "ultimate victory of the woman's suffrage movement" is. The first paragraph of the second passage makes it clear the author views the passing of the amendment to the constitution as the "ultimate victory," and this occurred with Tennessee approving the amendment. So (A) is the answer.

12. C The *earliest* time that the second passage points to is the 1870s (the first passage refers to the Seneca Falls convention in 1848), and so (C) is the answer.

13. C The second passage describes "partial suffrage" as the right to, "vote in local affairs such as municipal elections, school board elections, or prohibition measures." All of the examples but (C) refer to local affairs. Choice (C) refers to something mentioned only in Passage 1 (which was, moreover, before the 1848 Seneca Falls convention).

14. B The second passage argues that the "partial suffrages" showed that woman could "responsibly and reasonably participate in a representative democracy." These examples made the reasoning of nonsuffragists, that woman were not fit to vote, difficult to maintain. Choice (B) correctly points to this same idea.

15. E To answer a question like this you have to clearly have in mind which passage discusses what. Neither passage mentions the number of the amendment that gave women the right to vote. The second passage mentions when the amendment became law in the first paragraph, so you can eliminate (A). The first passage mentions the Civil War in the first paragraph. The first passage mentions the leaders of NWSA in the second paragraph. The second passage is all about "partial suffrages," and you've confirmed this in question 14. The only possible answer is (E).

16. A Recall that the author of the second passage saw the "partial suffrages," the local successes of the woman's movement in the 1870s and 1880s, as crucial to the ultimate success of the movement. The first passage says that AWSA focused on state-level issues. Choice (A) states as much and is the best choice. NWSA was specifically interested in federal and constitutional issues, so (B) is factually incorrect. The author of passage two agrees that the constitutional amendment was the ultimate success of the suffrage movement, so he or she would not agree with (C). (D) also contradicts that view. (E) is more difficult to eliminate, but the author of Passage 2 doesn't mention any differences within the suffrage movement. Choice (A) is the best answer.

Section 7

1. This one is all about PEMDAS.

$$\begin{aligned}\left[2\left(3^2\right)^2+\left(4-3(4)\right)^2\right] &= 2(9)^2+(4-12)^2\\ &= \left[2(81)+(-8)^2\right]\ 162+64\\ &= 162+64\\ &= 226\end{aligned}$$

2. Remember when you multiply or divide an inequality by a negative, you switch the direction of the inequality sign:

$$\begin{aligned}22-3x &> 13\\ 22-22-3x &> 13-22\\ -3x &> -9\\ \frac{-3x}{-3} &< \frac{-9}{-3}\\ x &< 3\end{aligned}$$

The only two positive integers less than 3 are 2 or 1. Either one is an acceptable answer.

3. The cost will include the initial charge and the minute rate times thirty, $0.40 + 0.06(30) = 0.40 + 1.80 = 2.20$.

4. A good, no-nonsense way to find the least common multiple (LCM) is to multiply both numbers by increasing positive integers until both multiply to the same number.

$18 \times 2 = 36$	$24 \times 2 = 48$
$18 \times 3 = 54$	$24 \times 3 = 72$
$18 \times 4 = 72$	$24 \times 4 = 96$
$18 \times 5 = 90$	$24 \times 6 = 120$
$18 \times 6 = 108$	$24 \times 6 = 144$
$18 \times 7 = 126$	
$18 \times 8 = 144$	

Both numbers multiply out to 72, so this is the answer. Creating these two tables would take a lot of time if you didn't have a calculator, but since you do, make the most of it.

5. If x is any negative number, then the inequality will hold true because the absolute value bars will knock the value up well over 2. If you don't see this, plug in some negative numbers.

Thinking positively, if $x > 5$ then the inequality is also true. The only remaining integers are 0–5. Plugging zero into the inequality, it still holds true. But if you plug 1–5 in, the inequality is not true. Thus any integer 1, 2, 3, 4, 5 is correct.

6. This problem works very much like a function machine. Take the number they give you and place it into the equation, then solve. For the eleventh term, k will be equal to 11, so

$$\frac{10(k+1)}{k-1} = \frac{10(11+1)}{11-1} = \frac{10(12)}{10} = \frac{120}{10} = 12$$

7. If you do not see the answer by visualizing the points, you can always use the formula for the midpoint. It is just the average of the coordinates (in this case, the y coordinates)

$$\frac{y_1 + y_2}{2} = \frac{2+6}{2} = \frac{8}{2} = 4.$$

8. You can use trigonometric functions to solve this problem, or you could use the Pythagorean theorem since this is a right triangle (the measure of the angles have to sum to 180 and you know the measures of two of the three angles, 40 and 50, sum to 90. This means the third angle must be 90.)

$$\begin{aligned} a^2 + b^2 &= c^2 \\ 4^2 + \left(2\sqrt{5}\right)^2 &= c^2 \\ 16 + 20 &= c^2 \\ 36 &= c^2 \\ 6 &= c \end{aligned}$$

The answer is 6.

9. The mean is the average, so we have to add up all the numbers and divide by the total:

$$\frac{7+4+3+6+2+2}{6} = \frac{24}{6} = 4.$$

The median is the number in the middle if you line up all the numbers from greatest to least. Since there is an even number of numbers, the median will be the average of the two middle numbers, {2, 2, 3, 4, 6, 7}. The median then is the average of 3 and 4, or 3.5. The difference between the two is 0.5 or $\frac{1}{2}$.

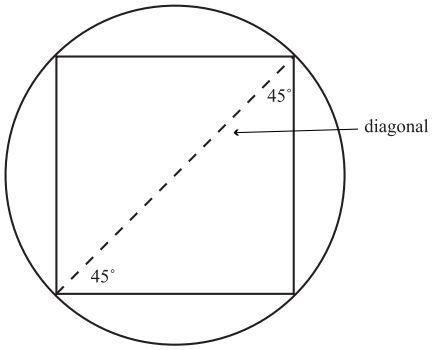
10. Draw this picture! Two lines that are perpendicular to the same line are parallel. To see this, draw one line perpendicular to another, and then draw a third line perpendicular to the second; it will be parallel to the first line). That means a and c are parallel, which implies they have the same slope, $\frac{2}{5}$.

11. This might appear complicated, but a few careful substitutions and you will have the answer. When, $y = 3$, $x = 5$ because $x = y + 2$.

Now you need to plug this value of x into the function,

$$f(x) = x^2 + 3$$
$$f(5) = 5^2 + 3 = 25 + 3 = 28$$

12. The first step is to sketch the inscribed square.



The sides of the square are $\sqrt{8}$ since the area is 8. You get this by working backward from the area of a square formula:

$$A = s^2$$
$$8 = s^2$$
$$\sqrt{8} = s$$
$$\sqrt{4 \times 2} = s$$
$$2\sqrt{2} = s$$

The longest straight line that originates and terminates on the circumference is the diagonal of the square. Now that you have the side of the square, you can find the length of its diagonal because two sides of the square and its hypotenuse make a 45-45-90 right triangle. The diagonal is the hypotenuse, so it will be $\sqrt{2}$ times greater than a side.

This means the diagonal of the square is:

$$\left(2\sqrt{2}\right)\left(\sqrt{2}\right) = 2\sqrt{4} = 2 \times 2 = 4.$$

13. Our range of numbers to meet the conditions is 1000 to 1198. The only way to meet the two conditions in the 1100's is to have the ones and units sum to 15 since with the two 1's (in the hundreds and thousands place) will make the sum 17. But this is impossible, since two numbers that are the same cannot sum to an odd number. Therefore, the answer must be in the 1000's. 1011 is far too less a sum of digits, and 1099 is too great, but not by much. Try 1088. It sums to 17.

Section 8

As you might expect, answers will vary. If possible, politely ask a teacher, fellow student, or some other person knowledgeable about formal essay writing to review your essay and provide feedback on ways in which the essay is commendable and on areas where it could be improved.

Scoring Worksheet

MATH				
	Number Correct	**Number Incorrect**	**=**	**Raw Score**
Section 2	_____	− (.25 × _____)	=	_____
Section 5	_____	− (.25 × _____)	=	_____
Section 7	_____	− (.25 × _____)	=	_____
CRITICAL READING				
Sections 1, 4, and 6	_____	− (.25 × _____)	=	_____
WRITING				
Section 3	_____	− (.25 × _____)	=	_____
Section 8	Go to www.petersons.com/satessayedge/ for instant online scoring and feedback.			

Score Charts

MATH

Raw Score	Math Scaled Score	Raw Score	Math Scaled Score
60	800	28	500
59	800	27	490
58	790	26	490
57	770	25	480
56	760	24	470
55	740	23	460
54	720	22	460
53	710	21	450
52	700	20	440
51	690	19	430
50	680	18	420
49	670	17	420
48	660	16	410
47	650	15	410
46	640	14	400
45	630	13	390
44	620	12	380
43	610	11	370
42	600	10	360
41	600	9	350
40	590	8	340
39	580	7	330
38	570	6	320
37	560	5	310
36	560	4	300
35	550	3	280
34	540	2	270
33	540	1	250
32	530	0	240
31	520	−1	220
30	510	−2	210
29	510	−3 and below	200

CRITICAL READING

Raw Score	Verbal Scaled Score	Raw Score	Verbal Scaled Score
78	800	37	510
77	800	36	510
76	800	35	500
75	790	34	500
74	780	33	490
73	770	32	490
72	760	31	480
71	750	30	480
70	740	29	470
69	730	28	460
68	720	27	460
67	710	26	450
66	700	25	450
65	700	24	440
64	690	23	440
63	680	22	430
62	670	21	420
61	670	20	410
60	660	19	410
59	650	18	400
58	640	17	390
57	640	16	380
56	630	15	380
55	620	14	370
54	610	13	360
53	610	12	360
52	600	11	350
51	600	10	340
50	590	9	330
49	590	8	320
48	580	7	310
47	570	6	300
46	570	5	290
45	560	4	270
44	550	3	260
43	550	2	250
42	540	1	240
41	540	0	230
40	530	−1	220
39	520	−2	210
38	520	−3 and below	200