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**PRACTICE TEST**

**Answers and Explanations**

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## **Additional Practice for the GRE—Writing Section**

Starting on page v, you will find the Analytical Writing prompts available to you for additional practice.

Allow yourself 30 minutes to write your essay and complete the “Analyze an Issue” task. The essay prompt is on page vi, and you should write your response on pages viii–xi.

The “Analyze an Argument” task is on page xiv. Allow yourself 30 minutes to write your essay and complete this task. You should write your response to this assignment on pages xvi–xix.

After you complete these essays, you can use the “Analytical Writing Scoring Rubric” on pages 24–25, and the “Sample Essay Responses” on pages 25–27 to evaluate your performance.

You can also review the actual essay topic pools created by the testmaker, ETS. These are available by going to the GRE website. The entire pool of possible “Analyze an Issue” topics is available here:

**[http://www.ets.org/gre/revised\\_general/prepare/analytical\\_writing/issue/pool](http://www.ets.org/gre/revised_general/prepare/analytical_writing/issue/pool).**

The entire pool of “Analyze and Argument” topics is available here:

**[http://www.ets.org/gre/revised\\_general/prepare/analytical\\_writing/argument/pool](http://www.ets.org/gre/revised_general/prepare/analytical_writing/argument/pool).**

**Analytical Writing 1**  
**Analyze an Issue**

1 Question

30 Minutes

**Directions:** You will be given a brief quotation that states or implies a topic of general interest, along with explicit instructions on how to respond to that topic. Your response will be evaluated according to how well you do the following:

- Respond to the specific directions the task gives you.
- Reflect on the complexities of the issue.
- Organize and develop your thoughts.
- Support your reasoning with relevant examples.
- Express yourself in standard written English.

**AW1**

**AW1**

**AW1**

**AW1**

“Scientific theories, which most people consider as ‘fact,’ almost invariably prove to be inaccurate. Thus, one should look upon any information described as ‘factual’ with skepticism since it may well be proven false in the future.”

Write an essay in which you take a position on the statement above. In developing and supporting your viewpoint, consider ways in which the statement might or might not hold true.

**AW1**

**AW1**

**AW1**

**AW1**

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## Analytical Writing 2

### Analyze an Argument

1 Question

30 Minutes

**Directions:** You will be presented with a short passage that asserts an argument or position, along with explicit instructions on how to respond to the passage. Your response will be evaluated according to how well you do the following:

- Respond to the specific directions the task gives you.
- Analyze and interpret important elements of the passage.
- Organize and develop your analysis.
- Support your reasoning with relevant examples.
- Express yourself in standard written English.

The following appeared in a memorandum from the owner of the Juniper Café, a small, local coffee shop in the downtown area of a small American city:

“We must reduce overhead here at the café. Instead of opening at 6 a.m. weekdays, we will now open at 8 a.m. On weekends, we will only be open from 9 a.m. until 4 p.m. The decrease in hours of operations will help save money because we won’t be paying for utilities, employee wages, or other operating costs during the hours we are closed. This is the best strategy for us to save money and remain in business without having to eliminate jobs.”

Write a response in which you discuss what questions would need to be answered in order to assess the reasonableness of both the prediction and the argument upon which it is based. Be sure to explain how the answers to these questions would help to evaluate the prediction.

**AW2**

**AW2**

**AW2**

**AW2**

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## ANSWER KEY

### VERBAL REASONING 1 SECTION 1 ANSWER KEY

1. C
2. B
3. A, D
4. B, D
5. A, E, H
6. A, E
7. C, E
8. A, D
9. B, C
10. D, F
11. A
12. D
13. C
14. D
15. A, B
16. E
17. E
18. A, B
19. C
20. D

### QUANTITATIVE REASONING 1 SECTION 2 ANSWER KEY

1. C
2. A
3. D
4. D
5. B
6. C
7. A
8. D
9. B
10. 30
11. E
12. 6
13. C
14. B, D
15. 8
16. E
17. D, E
18. C
19. D
20. A, D

**VERBAL REASONING 2**  
**SECTION 3 ANSWER KEY**

1. B
2. B, D, G
3. A, F, H
4. E
5. A, E, I
6. D
7. A, F
8. A, F
9. B, D
10. B, C
11. E
12. C
13. A, B
14. C
15. E
16. D
17. A
18. B
19. C
20. E

**QUANTITATIVE REASONING 2**  
**SECTION 4 ANSWER KEY**

1. D
2. A
3. B
4. D
5. C
6. A
7. A
8. D
9. D
10. D
11. B
12. 0.9
13. D
14. B, C, E
15. 60
16. E
17. B, D
18. D
19. B
20. E

## ANSWERS AND EXPLANATIONS

### VERBAL REASONING 1 SECTION 1 EXPLANATIONS

#### 1. C

This particular sentence has no detour road signs. Here the key phrase is “known for their devotion to their masters,” so you might predict that the missing word means something like “loyalty” or “devotedness.” The correct answer, **(C)** *fidelity*, is a close match for this prediction.

#### 2. B

This sentence contains a detour road sign, “nonetheless,” so you can expect the first part of the sentence to contrast with the fact that Larkin “maintained a spirited correspondence with a wide circle of friends.” So you might predict that the missing word means something like “withdrawn” or “shy.” Choice **(B)** matches this prediction: “By nature *reclusive*, Philip Larkin nonetheless maintained a spirited correspondence with a wide circle of friends.” That makes perfect sense.

#### 3. A, D

The road sign “because” in the first half of this sentence tells you that the second half will continue the thought of the first. The second half indicates that there was “no way to predict” the decision-making process’s outcome, so a description of the process as “random” makes sense. The prediction matches **(A)** *arbitrary*, “determined by chance, whim, or impulse.” Choice **(B)** *regimented*, “rigidly organized,” means the opposite of what the sentence requires. Choice **(C)** *unilateral*, “relating to only one side,” is also incorrect—the fact that the decision-making process may have been entirely in the hands of one person does not logically lead to there being “no way to

predict its outcome.” The sentence compares the decision-making process to throwing dice, so a good prediction would be, “making decisions was *similar to* throwing dice.” The best match is **(D)** *likened to*. Choice **(E)** *belittled by* doesn’t make sense in context, and **(F)** *dissimilar to* means the opposite of what the sentence requires.

#### 4. B, D

Look at blank (ii) first. The tax burden of most of the citizens comes from an “unvarying” tax, so the legislation mentioned earlier in the sentence must have had a *minor* effect on the middle class. **(D)** *negligible* matches perfectly. The road sign “although” indicates contrast, so the bill that produced “negligible” results must have been expected not only to have a significant effect, but a positive one. A prediction is “optimism” or “praise.” **(B)** *acclaim* works best. **(C)** *hullabaloo* and **(A)** *commotion* are tempting choices, but do not have sufficiently strong positive connotations, particularly as the bill is described as having been “heralded.”

#### 5. A, E, H

The three blanks are related in this sentence: Blank (i) causes blank (ii) and prevents blank (iii). In the first blank, only an **(A)** *established* viewpoint could potentially **(E)** *skew* the reader’s opinion, and an **(A)** *established* viewpoint would logically exclude an **(H)** *impartial* viewing. With the information given, only *established*, *skew*, and *impartial* logically follow each other.

#### 6. A, E

This is a high-difficulty sentence, but elimination and prediction will help you out a great deal. The first clause and then the road sign “therefore” suggest that the clause with the

blanks will provide an alternative to the fact that moving away from fossil fuels is insufficient to stabilize carbon emissions. Blank (ii) has a meaning similar to “store,” so eliminate (F) *liberate*. (D) *incarcerate* means to put in prison and refers to people, and not substances, so it cannot be correct. (E) *capture* matches. For blank (i), notice that the technologies must also be for “storing” carbon waste. Choices (B) *reduction* and (C) *diminution* can be eliminated. Choice (A) *sequestration* matches the prediction of “storing” and is correct.

### 7. C, E

To figure out what fits in the blank, note the detour road sign “although” between the first and second halves of the sentence. This tells you that what came before will be contradicted by what comes after. The first clause tells you that Handy’s nickname is “self-conferred,” so you can speculate that not everyone shares Handy’s self-assessment. You could paraphrase the sentence this way to predict the blank: “Handy feels he’s the father of the blues, but other musicians ‘disagree.’” You’re looking for a synonym for “disagree.” You can eliminate choices (A), (D), and (F), which say that Handy’s moniker was *professed*, *proven*, or *demonstrated*—they mean the opposite of what you want. Choice (B), which states that Handy’s nickname was widely *deconstructed*, or “examined,” *could* be right since other musicians came up with a different opinion, so keep it as a possibility. Choice (C), *disputed*, has exactly the meaning you need, so keep this, too. That leaves choice (E) *contested* which produces a sentence with the same meaning as choice (C), so (C) and (E) are the correct answers.

### 8. A, D

In this sentence, which has no road signs, read for key words and what’s implied (i.e., for logic). When an “expectation of instant gratification”

isn’t fulfilled, a feeling of disappointment would ensue. So the answer choices have to mean “disappointment.” You can eliminate choices (B) and (E), *endearment* and *elation*, right away since they have the opposite meaning. Choice (F) *pacifism*, “an opposition to war of any kind,” isn’t right for this sentence— an unreturned message would cause *conflict* in a relationship, rather than promote peace. Choice (C) *recompense* means “compensation” and can also be eliminated. That leaves (A) and (D), *chagrin* and *vexation*, both of which match the prediction and have the right meaning for the sentence.

### 9. B, C

This is an intriguing sentence since the answer choices include two arcane words, *augmented* and *meliorated*. A good strategy for questions like this is to use the process of elimination on the answer choices. First, look at what the sentence implies, paraphrase it, and predict the answer: “The zookeepers are ‘changing’ the exhibit to handle more visitors.” All the answer choices except (D) and (F), *maintained* and *neglected*, express change, so eliminate those two. Of the remaining choices, (A) and (E), *abridged* and *truncated*, mean “to make shorter,” which, when applied to the sentence, wouldn’t help the exhibit accommodate more traffic. The final choices are (B) and (C), which are two high-level vocabulary words (meaning “added to” and “improved” respectively) and the correct answers.

### 10. D, F

Without structural road signs, you need to see if paraphrasing or key words can help you find synonyms. Scientists have observed odd fish behavior that precedes seismic events—the fish jump out of the water. Your paraphrase and prediction might look something like this: “Scientists ‘theorize’ that fish respond to physical precursors of seismic events.” Both

choices **(D)** and **(F)**, *hypothesize* and *contend*, fit this definition, and are therefore the correct answers. Choice **(A)** *repudiate* means to reject an idea, not present one. Scientists don't *authorize* information, so choice **(B)** is also incorrect. Choice **(C)** *foresee* does imply prediction, but one based on intuition, not on observed behavior. Finally, it wouldn't make sense for scientists to **(E)** *question* their own prediction in this context.

**11. A**

You're asked to find the statement or statements that have direct support in the passage. The last sentence in the passage states that most orders are not exclusively beneficial or exclusively parasitic, but include species with both characteristics. That's choice **(A)**. Choice **(B)** is too extreme, since the author speaks of minimizing harm to other species, not eliminating it. Choice **(C)** presents a scenario that's the opposite of what the passage expresses: facilitating the development of parasitic insects isn't in line with the goal of controlling pest species.

**12. D**

The key phrases "protecting native species" and "maintaining a balanced ecosystem" suggest that entomologists are trying to prevent humans from changing the existing environment. *Intrusion*, choice **(D)**, is a good description of what they're trying to avoid. **(A)** *Obliteration* means extinction, and is too extreme in this context. There's no suggestion that humans are fighting against insects or asking insects for anything, so rule out **(B)** and **(C)**, respectively. Choice **(E)** *mediation* is a meaning of "intercession," but you are looking for a word with a negative charge.

**13. C**

In this Sentence Function question, you have to characterize the relationship between the two highlighted sentences. While it may be

a bit hard to determine the function of the first sentence right away, the wording of the second sentence makes it clear that this is the passage's conclusion. Looking at the second phrase in each answer choice, you can see that only **(C)** and **(E)** correctly describe the second sentence. The passage describes no outside position, so you can rule out **(E)**, making **(C)** the correct choice. Choice **(A)** includes the correct roles for the sentences, but associates each role with the wrong sentence. The author doesn't present an objection to the passage's conclusion, eliminating **(B)**. Choice **(D)** is incorrect because the second sentence expresses the main conclusion, not an intermediate conclusion.

**14. D**

This Global question asks you to sum up the passage's purpose. The author's tone is one of explanation rather than argument, so you can rule out **(A)** (*arguing that...*) and **(E)** (*persuading readers...*) right away. The passage explains how the terms Persian and Iranian intersect and provides two perspectives on why one term might be preferable to the other. That's choice **(D)**. The author does not mention the fall of the Persian Empire, so choice **(B)** is incorrect. Although three groups are mentioned, the author doesn't focus on differentiating among them, so **(C)** isn't the best summary of the passage, either.

**15. A, B**

To select the correct choices, you must identify the groups to whom the term *Persian* applies according to the passage. Since both Iranian and Afghani people may use the descriptor, the woman in **(A)** could be described as Persian. The first sentence says that both Iranian immigrants and U.S.-born Iranian Americans identify as Persian, so the man in **(B)** also fits the criteria. However, it is clear that the

term refers to heritage or citizenship or both, so it would not be accurate to describe someone of English descent who is an American citizen, choice (C), as Persian.

**16. E**

This Detail question references a detail from the passage directly: that the Persian Empire covered “part of Iran and parts of... Pakistan and Afghanistan.” That’s choice (E). The Persian Empire isn’t said to have covered the entirety of any of the countries in question, so we can eliminate choices (A), (B), (C), and (D).

**17. E**

The question asks which choice is most analogous in meaning to the boldfaced sentence, “To look feminine, fashionable sixth-century women would achieve the same ideal by bleeding themselves.” All the choices are about animals, not people, but only (E) contains an analogous situation: self-destructive physical harm to (allegedly) produce a more alluring image to the opposite sex. Choice (A) mentions light and dark coloring, which the passage does discuss, but it’s not analogous to the boldfaced sentence in meaning. The second choice (B) concerns camouflage only. While (C) includes self-destructive physical harm, that harm is inflicted for survival purposes, not for attractiveness. The opening phrase of (D) sounds like the boldfaced sentence, but the remainder of the sentence discusses a naturally occurring trait, not a self-inflicted one.

**18. A, B**

The author describes several societies where women lightened their skin as dictated by the fashion of the time, but also cites a culture where darker colors were preferred (Persians with henna dye). Hence, choice (A) is correct. The passage states that in 13th-century Italy, the use of makeup was a sign of social status,

so choice (B) is correct. The passage begins with the Greco-Roman societies, but doesn’t say whether the practice of lightening skin originated there, so (C) is incorrect.

**19. C**

For varied reasons—to *flaunt affluence* (A), *to attract attention* (D), and *to look feminine* (E)—most of the societies described in the passage preferred white color or paleness on women’s faces. These 3 choices are thus incorrect. The Egyptians preferred a light foundation also, but of a *golden* hue, so (B) is incorrect. In this passage, only the Persians went for a darker look with henna dye in their hair and on their skin to “summon the majesty” of the earth. Choice (C) is hence a reason for preferring artificially darker rather than lighter skin, and is the correct answer.

**20. D**

The passage discusses a particular “ism” (a theory or concept) called solipsism, which is the view that self is the only object of real knowledge or that nothing but the self exists. The best answer to the question, then, is (D), *presenting the definition of a concept*. Choice (A) is close, except that solipsism is a belief, not a *phenomenon*, which is an observable fact or event that can be scientifically described. The author doesn’t “refute” anything, so (B) is incorrect. Also, there are no key words, such as “conversely” or “on the other hand” to indicate “contrasting” schools of thought, so (C) is incorrect. The phrase “a physical object to a person” describes what the author meant by “anything else,” and is not the basis of any comparison, so (E) is incorrect.

## QUANTITATIVE REASONING 1

### SECTION 2 EXPLANATIONS

#### 1. C

Right triangles  $ABD$  and  $CDB$  share a hypotenuse, segment  $DB$ . The shared hypotenuse should clue you to use the Pythagorean theorem. See that  $w$  and  $x$  are lengths of the legs of right triangle  $ABD$ ; side  $AD$  has length  $w$ , side  $AB$  has length  $x$ . Also,  $y$  and  $z$  are lengths of the legs of right triangle  $CDB$ ; side  $CD$  has length  $z$ , side  $CB$  has length  $y$ . Where  $a$  and  $b$  are lengths of the legs of a right triangle, and  $c$  is the length of the hypotenuse,  $a^2 + b^2 = c^2$ . So here  $w^2 + x^2 = \text{length } BD^2$ ;  $y^2 + z^2$  also equals length  $BD^2$ . The quantities are equal, and the answer is (C).

#### 2. A

You have  $x + 4y = 6$  and  $x = 2y$ , and you want to compare  $x$  and  $y$ . Let's start by finding  $y$ . Substitute  $2y$  for  $x$  in the first equation and get  $2y + 4y = 6$  or  $6y = 6$ . Divide both sides by 6 and get  $y = 1$ . If  $y = 1$  and  $x = 2y$ , as the second equation states,  $x$  must equal 2. Because 2 is greater than 1, Quantity A is greater.

#### 3. D

Quantity A asks for the number of managerial employees—that number can be found. There are 120 employees in the firm, and 25 percent of them are managerial. One-fourth of 120 is 30, the value of Quantity A. Quantity B asks for two-thirds of the clerical employees. But there is no information given about the number of clerical workers, so you can't find two-thirds of that number. You can't determine a relationship, and the answer is choice (D).

#### 4. D

To make the quantities look as much alike as you can, use FOIL to multiply out Quantity A.

You'll multiply  $a \times b$ ,  $1 \times b$ ,  $1 \times a$ , and  $1 \times 1$  and get  $ab + a + b + 1$ . Quantity B also has  $ab + 1$ . Quantity A has the additional terms  $a$  and  $b$ . There is no information given about possible values for  $a$  or  $b$ . Because  $a + b$  could be positive, negative, or zero, a relationship cannot be determined and the answer is (D).

You can also use Picking Numbers; let  $a = 1$  and  $b = 2$ . Then Quantity A is  $(1 + 1)(2 + 1) = 6$  and Quantity B is  $(1 \times 2) + 1 = 3$ . In this case, Quantity A is greater. But if you let  $a = -1$  and  $b = -2$ , you have Quantity A  $= (-1 + 1)(-2 + 1) = 0$  and Quantity B  $= (-1 \times -2) + 1 = 3$ . In this case, Quantity B is greater. You have demonstrated that a definite relationship cannot be determined, leading to answer choice (D).

#### 5. B

In the two-digit number  $jk$ , the value of digit  $j$  is twice the value of digit  $k$ . You have to compare the value of  $k$  in Quantity A with 6 in Quantity B. If you plug in 6 for  $k$ , it is not possible to enter "twice the value of the digit  $k$ " for the digit  $j$ . That is because  $j$  can only be a single digit; it cannot be 12. In other words,  $k$  has to be something less than 6, so the answer must be (B). The value in Quantity B is greater.

#### 6. C

Henry purchased  $x$  apples, and Jack purchased 10 apples less than one-third the number of apples Henry purchased. *One-third of* means the same as *one-third times*, and the number of apples Henry purchased is  $x$ . Thus, this boils down to  $J = \frac{1}{3}x - 10$ . You can plug this in for Quantity A. We have  $\frac{1}{3}x - 10$  in Quantity A and  $\frac{x - 30}{3}$  in Quantity B. Now you can clear the fraction in Quantity B. Let's split Quantity B into two fractions.  $\frac{x}{3} - \frac{30}{3}$ . Leave the  $\frac{x}{3}$  alone

and cancel the factor of 3 from the numerator and denominator of  $\frac{30}{3}$  and you're left with  $\frac{x}{3} - 10$ . What's  $\frac{x}{3}$ ? It's one-third of  $x$ . So Quantity A equals  $\frac{1}{3}x - 10$ , while Quantity B also equals  $\frac{1}{3}x - 10$ , and the answer is **(C)**.

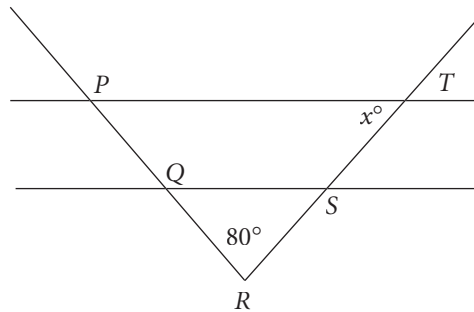
### 7. A

The figure shows a circle with right angle  $QPR$  as a central angle. The area of sector  $QPR$  is 4, and you're asked to compare the area of the circle with  $4\pi$ . There's a shortcut—the right angle defines the sector, and you have the area of that sector. A  $90^\circ$  angle cuts off one-fourth of the circle. Therefore, if you multiply the area of the sector by 4, you have the area of the circle. So in Quantity A you have  $4 \times 4$ , and in Quantity B you have  $4\pi$ . You know that  $\pi$  is about 3.14, and 4 is greater than that, so Quantity A,  $4 \times 4$ , must be greater than  $4\pi$ , and the answer is **(A)**.

### 8. D

You can suspect **(D)** because there are unrestricted variables. In Quantity A, you have the volume of a rectangular solid with length 5 feet, width 4 feet, and height  $x$  feet. The formula is length times width times height, so the volume is 5 times 4 times  $x$ , or  $20x$ . In Quantity B, you have the volume of rectangular solid with length 10 feet, width 8 feet, and height  $y$  feet: 10 times 8 times  $y$  gives you a volume of  $80y$ . There is no information given about the values for  $x$  and  $y$ ; they could be any positive numbers. You can Pick Numbers to test the relationship. If  $x = 5$  and  $y = 1$ , Quantity A is greater. If you reverse the values—let  $x = 1$  and  $y = 5$ —then Quantity B is greater. So, the correct answer is **(D)**.

### 9. B



$$PQ = ST$$

$$QR = RS$$

The goal is to find  $x$ , the measure of one of the angles formed by the intersection of  $ST$  and  $PT$ . Now angle  $QRS$  is labeled  $80^\circ$ . You also know  $PQ$  and  $ST$  have the same length and  $QR$  and  $RS$  have the same length. If you add  $PQ$  and  $QR$ , you get  $PR$ . If you add  $ST$  and  $RS$ , you get  $RT$ . If you add equals to equals, you get equals, so  $PQ + QR$  must be the same as  $ST + RS$ , which means that  $PR$  and  $RT$  are the same. You have isosceles triangle  $PRT$ , and you're given one angle that has measure 80 and a second angle that has measure  $x$ . The angle measuring  $x$  is opposite equal side  $PR$ . That means the other angle must have the same measure. The sum of the interior angles in a triangle always equals  $180^\circ$ . Thus,  $x + x + 80$  must equal 180,  $2x = 100$ , and  $x = 50$ . The answer is **(B)**.

### 10. 30

This is a permutation problem because the order in which the duo is chosen matters. The producer has two slots to fill. For the lead role, there are 6 people to choose from. For the supporting role, there will be 5 people to choose from. So the number of possible duos is  $6 \times 5 = 30$ .

**11. E**

The question asks for the number of different dinners Jane could make. Since the order of the selections in the dinner doesn't matter, this is a combination problem. But it involves three possible combination types: Veg, Meat, Meat; Veg, Veg, Meat; or Veg, Veg, Veg. We must calculate the possibilities for each type of combination and then add the results to find the total number of different combinations possible.

Let V represent vegetarian and M represent meat.

Then with V, M, M, she has 5 choices for the vegetarian (she must choose 1)  $\times$  4 choices for meat (she must choose 2).

For V, V, M, she will choose 2 from among 5 for the vegetarian and 1 among 4 for the meat.

If she goes with V, V, V, the all-vegetarian menu, she will choose a subgroup of 3 from among 5 vegetarian choices.

If  $n$  and  $k$  are positive integers where  $n \geq k$ , then the number of different subgroups consisting of  $k$  objects that can be selected from a group consisting of  $n$  different objects, denoted by  ${}_n C_k$ , is given by the formula

$${}_n C_k = \frac{n!}{k!(n-k)!}$$

Here the total number of different possible servings for a plate is  $({}_5 C_1)({}_4 C_2) + ({}_5 C_2)({}_4 C_1) + ({}_5 C_3)$ .

Now  ${}_5 C_1$  represents choosing 1 type of vegetable selection from 5 different types, so  ${}_5 C_1 = 5$ . (The formula also gives this result.) Now we use the formula to find the next two variables:

$${}_4 C_2 = \frac{4!}{2!(4-2)!} = \frac{4!}{2! \times 2!} = \frac{4 \times 3 \times 2 \times 1}{2 \times 1 \times 2 \times 1} = 6$$

$${}_5 C_2 = \frac{5!}{2!(5-2)!} = \frac{5!}{2! \times 3!} =$$

$$\frac{5 \times 4 \times 3 \times 2 \times 1}{2 \times 1 \times 3 \times 2 \times 1} =$$

$$\frac{5 \times 4 \times 3 \times 2 \times 1}{2 \times 1 \times 3 \times 2 \times 1} = 10$$

Here  ${}_4 C_1$  corresponds to choosing 1 type of meat selection from 4 different types, so  ${}_4 C_1 = 4$ . Then we use the formula again:

$${}_5 C_3 = \frac{5!}{3!(5-3)!} = \frac{5!}{3! \times 2!} =$$

$$\frac{5 \times 4 \times 3 \times 2 \times 1}{3 \times 2 \times 1 \times 2 \times 1} = 10$$

So the number of different possible servings that can be made for a plate is  $5 \times 6 + 10 \times 4 + 10 = 80$ , choice **(E)**.

**12. 6**

You could find the number of tasks per hour from one computer, but that would add extra steps, because you want to find out how many computers you need to do a certain number of tasks in three hours. Well, if the computer can do 30 tasks in six hours, it can do 15 tasks in three hours. So, two computers could complete 30 tasks in that time. Three computers could do 45; four could do 60; five could do 75; six could do 90. You can't get by with five computers because you have to get 80 tasks done, so you'll need **6** computers.

**13. C**

To make the number of integers easier to count, note that the number of integers between  $c$  and  $2c$  is equal to the number of integers between 0 and  $c$ . For example, there are 4 integers between 5 and 10, and there are 4 integers between 0 and 5. Now the problem is simpler. The number of integers between 0 and  $c$  is equal to  $c - 1$  (you can't include  $c$  as one of the integers). Therefore, the answer is **(C)**.

Picking Numbers is also a good strategy, since there are variables in the question and the answer choices. If  $c = 3$ , then  $2c = 6$ . There are two integers between 3 and 6, so plug  $c = 3$  into the answer choices to see which one is equal to 2.

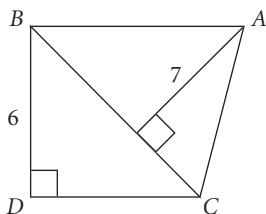
- (A)  $\frac{3}{2} \neq 2$   
 (B)  $3 \neq 2$   
 (C)  $3 - 1 = 2$   
 (D)  $3 - 2 \neq 2$   
 (E)  $3 + 1 \neq 2$

The only answer choice that equals 2 when  $c = 3$  is (C), so (C) is correct.

#### 14. B, D

You're asked to find what  $\frac{b}{a}$  could be; that may tell you there's more than one possible value for  $\frac{b}{a}$ . You're told the ratio of  $2a$  to  $b$  is 8 times the ratio of  $b$  to  $a$ . That's awkward to keep track of in English—it's a little easier to write fractions. The ratio of  $2a:b$  equals  $8\left(\frac{b}{a}\right)$ . So,  $2\left(\frac{a}{b}\right) = 8\left(\frac{b}{a}\right)$ , or  $\frac{2a}{b} = \frac{8b}{a}$ . By the Cross Product Property, you get  $2a^2 = 8b^2$ , or  $a^2 = 4b^2$ . Multiply each side of the equation by  $\frac{1}{4a^2} : \frac{a^2}{4a^2} = \frac{4b^2}{4a^2}$ . This is the same as  $\frac{1}{4} = \frac{b^2}{a^2}$ . Take the square root of both sides of the equation:  $\pm\frac{1}{2} = \frac{b}{a}$ . The ratio of  $b$  to  $a$  is  $\frac{1}{2}$  or  $-\frac{1}{2}$ . So, (B) and (D) are the answers. This problem is also a great candidate for Backsolving, although since this question could have more than one correct answer, you would need to test all answer choices to see which ones work out.

#### 15. 8



It is given that the area of triangle  $ABC$  is 35, and in the diagram, you're given a height for triangle  $ABC$ . If you use  $BC$  as the base of the triangle, the triangle's height is 7, so you can find the length of  $BC$ . When you find the length

$BC$ , the base of triangle  $ABC$ , what do you have? You have the hypotenuse of right triangle  $BDC$ . Given the hypotenuse and the length of leg  $BD$ , which is given in the diagram as 6, you'll be able to find the third leg of the triangle, side  $DC$ , which is what you're looking for.

Okay, going back to triangle  $ABC$ , the area is 35 and the height is 7. The area of a triangle is  $\frac{1}{2}$  base  $\times$  height, so  $\frac{1}{2}$  base  $\times$  height is 35,  $\frac{1}{2} \times 7 \times$  length  $BC$  is 35. That means  $7 \times$  length  $BC$  is 70, so  $BC$  must have length 10. Now look at right triangle  $BDC$ . Here is a right triangle with one leg of length 6, the hypotenuse of length 10, and the third side unknown. That's one of the famous Pythagorean ratios—it's a 3:4:5 triangle. So  $DC$  must have length  $2 \times 4$ , or 8.

#### 16. E

First, find the value of  $m$ . You are told that  $3^m$  is 81. Well, 81 is  $9 \times 9$  and 9 is  $3^2$ . So you have  $3^2 \times 3^2 = 81$  or  $3 \times 3 \times 3 \times 3 = 81$ . How many factors of 3 are there in 81? There are 4, so  $m$  has the value 4. Now  $4^3$  is  $4 \times 4 \times 4$  is 64. So (E) is correct.

#### 17. D, E

The problem states that  $x$  is between 0 and 1, so  $x$  must be a positive fraction (or decimal) less than 1. We can pick a number to get to the correct answer(s) here because both the question and the answer choices have variables. The decimal 0.5 is in the middle of the given range, so it's a good starting point.

(A) is false. Doubling any positive value always produces a greater value, not a lesser value.

(B) is false.  $2 \times 0.5 = 1$ ; this choice is incorrect because 0.5 is a counter example.

(C) is false.  $2 \times 0.5 = 1$ ; this choice is incorrect because 0.5 is a counter example for this statement also.

**(D)** is correct.  $0.5^2 = 0.25$ ; the square of any number between 0 and 1 (exclusive) will be less than the original number. This is an example of that property.

**(E)** is correct.  $0.25 < 1$ ; the square of any number between 0 and 1 (exclusive) will be less than 1. This is an example of that property. So, the correct answers are **(D)** and **(E)**.

**18. C**

To find how many categories had energy use greater than 150 million kilowatt-hours, you have to find out how many total kilowatt-hours were used in that year using the line graph. You see that 600 million kilowatt-hours were used in 1995. What is the relationship of 150 million kilowatt-hours to 600 million kilowatt-hours? It's 25 percent of 600 million kilowatt-hours, so you're looking for categories with more than 25 percent of the energy use for 1995. How many categories exceeded 25 percent? Just two, government and industrial. So your answer is **(C)**.

**19. D**

What you need to do for 1990 and 1995 is find the per capita personal use, then find the percent decrease from 1990 to 1995. To do that, let's plug in a value for the population of Country Y for 1990. Let's use 100 million for the '90s population. The per capita use in 1990 is the total personal use, which is 30 percent of 500 million or about 150 million. Set up 150 million kilowatt-hours, the total personal use, as a proportion with 100 million people, the population. The per capita use is  $\frac{3}{2}$  or 1.5. Going on to 1995, you are told the population increased by 20 percent, so in 1995 the population was 120 million—using our initial figure of 100 million. What was the total personal use of energy? It was a little bit less than 20 percent of your total 600 million, so call it 20 percent of 600 million, or 120 million.

If total personal use is 120 million and there are 120 million people, that's 1 kilowatt-hour per person. What's the percent decrease? It's a decrease of  $\frac{1}{3}$ , or  $33\frac{1}{3}$  percent. But remember, in 1995, they were using a little more energy for personal use than you figured. The correct answer must be a little greater than  $33\frac{1}{3}$  percent, so 35 percent, **(D)**, is the correct answer.

**20. A, D**

The question requires that you choose all the correct answers, so you have no choice but to test all the statements. Before you start, note that the top graph shows kilowatt hours; the bottom graph shows usage by percent of the total.

Statement A says farm use of energy increased between 1990 and 2010. In 1990, 500 million kilowatt-hours were used. In 2010, 710 million kilowatt-hours were used. What was the percent of farm use in 1990? It was 30 percent of the total in 1990 and a little bit less than 30 percent, around 28 percent, in 2010. The percents are very close together, while the whole has become much larger from 1990 to 2010, so 30 percent of 500 million is less than 28 percent of 710 million. Farm use of energy did go up in that 20-year period, and statement **(A)** is a correct choice.

Statement B says that in 2010, industrial use of energy was greater than industrial use of energy in 1995. But what was it in 1995? Industrial use of energy in 1995 was 30 percent of 600 million. The percent comes from the bar graph; the total comes from the line chart. Okay, 30 percent of 600 million is 180 million. But what about 2010? In 2010 industrial use of energy was 20 percent of about 710 million kilowatt-hours. Well, 20 percent of 710 is 142 million. That's less than 180 million, isn't it? In fact, industrial use of energy went down from 1995 to 2010, so this can't be inferred from the graph.

Statement C compares the percentage of energy use by government in 1990 and 2010. From the bar graph, the energy use in 1990 by government was a little more than 10%, and the energy use in 2010 by government is less than 30%. Without knowing the exact percentages, you can still infer that the percentage of energy use by government in 2010 was less than three times than the percentage in 1990. This choice is incorrect.

Statement D compares the kilowatt-hours used for farm purposes in the years 2000 and 2005. Don't just compare the bar graphs. All that tells you is that a little more than 10% of the energy used in 2000 was for farm use, and a little less than 20% of the energy used in 2005 was for farm use. However, looking at the line graph, you know that more overall energy was used in 2005 than in 2000. Since a larger percentage of a larger value will always be greater than a smaller percentage of a smaller value (assuming positive values, which are used here), you know that more energy was used for farm use in 2005 than in 2000. This statement is true.

To test Statement E, look at the distribution of the usage in the graph showing percents. The difference between the percents for government and personal use in 1990 shows that the types were not the most equally distributed in 1990.

Only **(A)** and **(D)** can be inferred from the graphs.

## VERBAL REASONING 2

### SECTION 3 EXPLANATIONS

#### 1. B

“Instead” is a detour road sign that tells you that the second half of the sentence will say the opposite of the first half. That means diversification shouldn’t “divert” the organization, so you’re looking for a word that means the opposite of divert. The answer is **(B)** *furthering*, which means “advancing or promoting.” **(A)** *undermining*, **(C)** *retracting*, and **(E)** *deterring* are all the opposite of what you need—they say that diversification will negatively affect the historical purpose. Choice **(D)**, *classifying*, doesn’t make sense in context.

#### 2. B, D, G

The best way to approach the first blank is to consider the logic of this sentence and predict an answer. A “keen” sense of smell is a positive attribute. What should a bee with a keen sense of smell be able to do with regard to kin and foe? To *promulgate* is to make known, in the sense of “to announce.” *Discern* means “to perceive or recognize.” And to *arbitrate* is to decide between disputants. A bee would want to “recognize” friend from foe, whether or not it did either of the other two things, and so **(B)**, *discern*, is the best choice.

The road sign “however” tells you that there is a “surprising deficiency” in another area, making bees unable to protect themselves from diseases. Which phrase most closely describes the desired response? Any of the three answer choices could work, but, as we said in the strategies section, the answer is in the question somewhere. Read the third sentence to see if it becomes clear. When you do, you’ll note the key words “various diseases” matches one of the second blank’s answer choices, *pathogens*. Let’s hold onto **(D)** for now.

The third sentence is a bit convoluted, and some of the answer choices are uncommon words, so paraphrase it to put it into simpler terms and predict the answer: “Bees ‘protect’ their colony through grooming behavior.” Only one of the answer choices, **(G)** *minimizes incursions by* fits our prediction. If you substitute the other terms into the blank and reread the sentence, you can confirm **(G)** as the correct choice; neither *implicating replication of* or *simulates action by* make sense in context.

Now that we have two of the blanks filled, we can return to blank (ii). When we read **(D)** *pathogens*, into the sentence, the three sentences make sense together, and **(D)** is correct.

#### 3. A, F, H

The key word in this sentence is “crisis.” You need adjectives and verbs that play well off of it. If you don’t know the meaning of *exigent*, you can use the process of elimination to identify the right answer. *Cretacious* means “chalky,” and one wouldn’t describe a need as chalky. You can eliminate *specious*—it means “false” and is the opposite of what you’re looking for. That leaves **(A)** *exigent*, which means “immediate.” It is the correct answer. Which of the actions would be required in a situation of “critical necessity”? Recall that there is a water crisis, so the resource involved is water. The word *ineffable* means “unable to be expressed,” so it makes no sense in this context. However, if you didn’t know that word, you could use the process of elimination to narrow your choices. If there were a water crisis, water would not be *abundant*, so you can eliminate **(E)**. That leaves **(F)** *mobilize limited* resources. “Limited” makes sense in the context of the crisis, so it is the correct choice, and a solid guess if you weren’t certain of the meaning of choice **(D)**. If you’re galvanizing political efforts to stave off a crisis, it’s likely you would want to **(H)**

*focus*, or concentrate, international attention on water use. **(G)** *foment*, “to incite,” and **(I)** *ferment*, “to brew,” both have connotations about creating; neither make sense in context and are incorrect.

#### 4. E

The detour road sign “although” contrasts the honor Pétain received for World War I with what he incurred during World War II. The sentence’s structure implies that the word in the blank will have a negative charge, so you can rule out the positive answer choices **(A)** *status* (“relative rank in a hierarchy”), and **(C)** *kudos* (“congratulations”). Choice **(B)** *reputation* doesn’t make sense—one earns a reputation, it is not incurred. Choice **(D)** *recompense* doesn’t make sense either, since the French wouldn’t compensate someone for something dishonorable. That leaves you with the correct answer, **(E)** *obloquy*, “disgrace or public censure.” One would heap *obloquy* on a person who’s done something hateful, like collaborating with the enemy.

#### 5. A, E, I

This is a long set of sentences, so you should paraphrase them to make the topic easier to get a handle on: “Although people don’t think of cellophane as paper, this \_\_\_\_\_ material is made from the same stuff as paper bags. It was invented to coat fabric, but its usefulness became \_\_\_\_\_ and resulted in a \_\_\_\_\_ product.”

For the first blank, you’re looking for a term that describes cellophane. Even if you don’t know what cellophane is, we can use the key words “clear plastic film” to complete the blank. The correct answer is **(A)** *diaphanous*, which means “see-through.” Choice **(B)** *standardized*, although true, doesn’t best complete the

meaning of the sentence. Choice **(C)** *opaque*, means the opposite of what we need here.

For the second blank, all the answer choices are two words, and a good technique in this situation is to try each choice in the blank to see which makes the most sense. Choice **(D)** *unjustifiably marketable* is incorrect—nothing in the text says that you can’t justify this useful product’s marketing. Choice **(E)** *immediately apparent*, is correct. Choice **(F)** *outrageously fashionable* doesn’t fit the context of the sentence.

Having filled in the first and second blanks, you have a strong sense of the meaning of the sentence: “Cellophane is useful and \_\_\_\_\_.” Nothing in the sentences describe cellophane as **(G)** *amorphous*, “shapeless,” so eliminate it. Choice **(H)** is a trap—don’t confuse *ingenuous*, or “innocent,” with “ingenious,” or “brilliant.” You would expect a product with “overwhelming usefulness” to be **(I)** *ubiquitous*, “constantly present,” and that’s the correct answer.

#### 6. D

From the detour road sign “unlike,” you can tell that Hume isn’t trying to determine whether an objective reality exists. Why wouldn’t he do so? Following this logic reveals the right word for the sentence. Hume disregarded objective reality not because he thought the issue was *pragmatic* **(A)**, “practical,” or *challenging* **(B)**. That would have made him want to investigate it. He probably didn’t try because he felt that the issue was either unverifiable or uninteresting. Choice **(D)** *insoluble*, “not capable of being solved,” fits the blank best. It’s unclear that Hume would be “unlike most philosophers” if he thought the issue was **(C)** *theoretical* or **(E)** *esoteric* (“understood only by a select few”), so both are wrong.

**7. A, F**

This is a long sentence and the blank occurs in the middle, so paraphrase it. As you do so, note that the word *although* is a detour road sign that indicates a contrast. A good paraphrase is, "People smoke, even though nicotine has a \_\_\_\_\_ effect on their health." You are looking for a pair of synonyms that have a negative tone and mean something like "bad" or "harmful." Choice **(A)** *deleterious* means "harmful," so it is correct. Choice **(B)** *addictive* is not a synonym for harmful, but it's often used to describe smoking, so don't eliminate it yet.

*Inimical* and *antagonistic*, choices **(C)** and **(D)**, both mean "hostile." If *inimical* was unfamiliar to you, you could use the roots strategy and think of a word or words that sound similar to it. *Intimidate* comes to mind; it has a negative tone and its meaning is similar to *antagonistic*. This is another example of a trap: this pair is synonymous and negatively charged, but the words don't accurately complete the meaning of the sentence.

Choice **(E)** *benign* means "harmless," the opposite of what you want, so eliminate it.

*Pernicious* **(F)** means "destructive," and it, too, fits well in the sentence. That leaves three potential answers—**(A)**, **(B)**, and **(F)**. Only two are synonyms, however: **(A)** and **(F)** create sentences with similar meanings, so they're right.

**8. A, F**

The phrase "to the public's great shock" is a key phrase—it tells you there's a contrast between what was expected ("peaceable reform") and what really happened. The correct answers must mean something like "violent rebellion." *Contumacious* is a difficult vocabulary word, so we'll use the process of elimination to go through all the answer choices. Choice **(B)**

*endemic* means "inherent," which doesn't fit the context of the sentence. Choices **(C)** and **(E)**, *erratic* and *irresolute*, both mean "unpredictable" or "uncertain." If you weren't sure of *irresolute*, consider its root, *resolute*, and think of a similar word, *resolution* in this case. A resolution is something you commit to doing, and irresolute is its opposite, "unsure" or "unable to make a decision."

These two words are plausible choices because they imply that the group didn't fulfill its promises, but they don't work in context. You need a contrast with "peaceable reform," something that would result in people's shock—unpredictability and uncertainty aren't shocking.

Choice **(D)**, *estimable*, "worthy," means the opposite of what you want. If you didn't know the meaning of this word, you could consider its root, *esti*. Think of words with a similar root that you *can* define, such as *esteem*. Knowing that esteem has a positive tone, you could deduce that *estimable* does as well, making it incorrect. That leaves you with choices **(A)** and **(F)**—*contumacious* and *seditious*—both of which mean "rebellious," and are the correct choices.

**9. B, D**

Some of the answer choices are fairly difficult words, but you can tell from the key word "concealed" that you want a word negative in tone. Based on that, two words pop out from the answer choices, *artifice* and *chicanery*, both of which are negative and both of which mean "deception." But you should go through the answer choices one at a time to confirm your selections.

Choice **(A)** *cabal* means "a secret group," and it doesn't work in context.

Choice **(B)** *artifice* sounds a lot like a word you're probably familiar with—"artificial," which means looking like one thing while actually being another. *Artifice* means "trickery." "Photo retouching and inflated claims" are forms of trickery, so this is one of the correct answers.

If you don't know the meaning of the word *hegemony* **(C)**, put it aside until you go through the other answer choices. Choice **(E)** *dominance* means "supremacy" or "domination," and doesn't make sense in context. Eliminate it. Choice **(D)** *chicanery* also means "deception and trickery," so it's also right. To determine the meaning of *imprecation*, choice **(F)**, think of a word with a similar root. One is precarious, which means "dangerous." Are advertising ploys dangerous? No. This word is too extreme to work in context. That leaves you with only *hegemony* outstanding. Even if its meaning is unclear, you have, through the process of elimination, two synonymous answer choices that fit well in context, and you should go with them. *Hegemony* means "influence" or "dominance." If you knew this definition, you'd know that *hegemony* is a synonym for another answer choice, *dominance*, and this is another example of a question with two sets of synonyms in the answer choices.

#### 10. B, C

While this sentence includes a classic detour road sign, "however," its structure is such that you can't identify what "however" is contradicting. As you've learned from Kaplan's strategies, key words can help you figure out the missing word in a sentence. The key words in this sentence are "conservative" and "unreceptive." You need to predict the kind of joke a conservative audience at a charity event would receive poorly. Choice **(A)** *plucky* means "brave," so eliminate it. Choices **(B)** and

**(C)**—*ribald* and *coarse*—both mean "vulgar." These are likely correct, but continue to test the other choices before answering definitively. Choices **(D)**, **(F)**—*traitorous* and *treacherous*—are synonyms that mean "disloyal." Although the performers betrayed the spirit of the event, this is not the meaning of the words needed to describe the jokes. Choice **(E)** *politic* means "diplomatic." This has the opposite meaning of the word you're looking for, so eliminate it. The correct answers are *ribald* and *coarse*.

#### 11. E

The first sentence expresses the passage's main idea (sharks are different from other fish), and the second sentence explains one of the ways in which this is true (they have livers, not swim bladders). That's choice **(E)**. Since no opposing perspective is included, you can rule out **(A)**. Choice **(B)** reverses the roles of the two sentences; the second sentence supports the first, not vice versa. No opposing argument is addressed, and the author forms no intermediate conclusion, so **(C)** and **(D)** are incorrect.

#### 12. C

This Inference question asks you to consider the information in the passage and speculate about the events that may have preceded those described. The phrase "for themselves" implies the patrons' ability to locate their own books, so it follows that they would previously have needed assistance from librarians, choice **(C)**. The passage says that Dewey was the first standardized method, but you have no basis to assume that no classification method existed before, **(A)**. Similarly, nothing suggests that libraries kept their methods confidential **(B)**. Although Dewey helped patrons find materials themselves, no information in the passage implies that this change affected librarians' jobs directly, so you can eliminate **(D)**. As for

choice **(E)**, the passage implies that patrons may have had difficulty locating items, but to say that they were never able to understand the system is too extreme.

**13. A, B**

A lower risk of fatal disease meant that vaccination was safer than inoculation, so **(A)** is correct. Since the passage mentions “enormous variations” between batches of inoculum, the “standard dose” used in vaccines would be more likely to be consistent, so **(B)** is also correct. Choice **(C)** is incorrect because it deals with tuberculosis inoculations, which are beyond the scope of the passage.

**14. C**

The second half of the sentence this question refers to explains that health care providers couldn’t predict the severity of disease due to the “disparities” in the doses given. The next sentence contrasts this practice with the “standard dose” of a vaccination, so inoculation must have used doses that had variations, or *inconsistencies*, **(C)**. *Incapacities*, **(A)**, and *ineffectiveness*, **(E)**, would suggest that the inoculations were unsuccessful, which contradicts the first sentence of the passage. While the practice of inoculation could be said to have *weaknesses*, **(B)**, this choice doesn’t make sense in relation to the second half of the sentence. Choice **(D)** is the antonym of the word given; if the inoculations had *resemblances*, they would all be relatively similar.

**15. E**

The passage as a whole is concerned with how to come up with a good definition of tragedy. In lines 9–14, the author leads into Scylla and Charybdis by mentioning “overly broad definitions” and “overly narrow ones,” respectively. Just afterward, he calls this situation a “definitional dilemma.” From these clues, you’re

thus led to infer that Scylla and Charybdis are names for the dangers that may befall anyone who tries to come up with a good definition of tragedy. **(E)** is in line with this inference and is correct. **(A)** cannot be correct because Terry Eagleton begs off providing a good definition in the first place. He seems to think that the task is simply impossible. So broad and narrow definitions, represented by Scylla and Charbydis, respectively, are not signs of Eagleton’s principal faults. **(B)** is outside the scope of the passage. The author is making no larger claim about the significance of myth. Similarly, **(C)** is outside the scope. This we know from the talk of “origin of myth”; the latter has no place in the author’s account and so is irrelevant. Like **(B)** and **(C)**, **(D)** is also outside the scope. Because the author makes no reference to other intellectual inquiries, you have no reason for believing that those are in any way applicable to the case at hand.

**16. D**

What is the main point of the passage? It is to criticize two authors’ views of tragedy (paragraphs 1–2) and to generate a new necessary condition for tragedy (paragraph 3). The answer that most closely matches this understanding is **(D)**. Consider that **(A)** is too narrow: Mandel isn’t even mentioned despite the fact that he is the “main character” in the passage. The problem with **(B)** is that it includes Eagleton in the author’s criticism of Mandel. In other words, the author *does* criticize Mandel for not providing all the necessary conditions for tragedy. But he *does not* have anything explicit to say about whether Eagleton falls prey to the same problem. Consequently, **(B)** is a distortion. Choice **(C)** is the opposite of what the author says. The author implies throughout the passage that tragedy can be definable. Though she pokes holes in both theorists’ accounts, the author seems, if anything, more sympathetic to Mandel,

who thinks that tragedy is definable, than she is to Eagleton, who does not. **(E)**, finally, is too strong because of the bit that follows the “in order to.” In the final paragraph, the author doesn’t provide you with a new definition of tragedy; she simply tells you that there’s at least one necessary ingredient in tragedy that Mandel fails to pick up on. Think about the point about necessary and sufficient conditions this way: To make a quiche, it’s necessary to use eggs. But eggs aren’t enough for something to be a quiche. After all, eggs can be used in a lot of other things—cake and omelets, just to name a few. The author is making the same point about powerlessness in the realm of tragedy: it’s necessary (or “absolutely essential”) but not sufficient for something to be tragic.

**17. A**

This question tests your ability to identify GRE vocabulary words within the Reading Comprehension portion of the exam. At the very least, you should be thinking that the author *liked*, *esteemed*, and *pitied* these characters. She says as much when she describes them as being “well-educated, tireless, but spiritually drained” (lines 44–45). The only answer that comes close is *laudatory*, meaning “worthy of praise.” Choice **(B)**, *conciliatory*, means “intending to placate,” so this does not work. Choice **(C)**, *despondent*, means “very sad.” You could infer that the characters themselves are despondent, but “the author’s attitude” is surely not despondent; therefore, **(C)** is incorrect. *Myopic* means “shortsighted,” and that has nothing to do with the passage before you, let alone the author’s attitude toward the protagonists in this work. And Choice **(E)**, *diffident*, means being “modest” or “timid,” and that’s not on target. In sum, none but **(A)** rings true.

**18. B**

This Inference question is essentially asking you to consider not only what Eagleton and Mandel have in common, but also what they do not. What do they have in common? According to the author, they don’t give us an adequate conception of tragedy. And now what are the main differences between them? They take different approaches to the task, Eagleton throwing his hands up and saying, in effect, that tragedy can’t be defined and Mandel digging his heels in and saying that it can. **(B)** captures what they share (that is, failure) and what they differ on (that is, the reasons for their respective failures). Regarding **(A)**, the author does not think that their ideas should be dismissed. Why would she have bothered methodically working through their ideas in the first place if this was her attitude toward their ideas? No, clearly she thinks that much can be learned from them. Thus, **(A)** is the opposite of what the passage says. As for choice **(C)**, the author’s ultimate assessment is that neither Eagleton’s nor Mandel’s view will do. What’s more, the passage never states whether the first thing about sadness should be weighed *as heavily* as the second thing about inevitability. For both of these reasons, **(C)** can’t be inferred. **(D)** is incorrect for two reasons. First, you can’t validly infer from the fact that a work is very sad that the heroes have necessarily suffered greatly. The fact of great suffering is, at best, probable and not certain. Second, great suffering is not at the center of Mandel’s view—as you know, the inevitability requirement is. The key word in **(E)** is *combine*. The author does examine different thinkers’ ideas, but her strategy is not to combine those ideas; her strategy is to criticize these ideas. Consequently, **(E)** can’t be inferred.

**19. C**

In this question, you should *only* look at paragraph 3. Make sure that “present conception of

tragedy” refers to Mandel’s view. Think about what the opening sentence is doing: it’s making clear to you the author’s chief complaint with Mandel. And then consider that the rest of the paragraph is trying to provide evidence for the complaint already mentioned.

Thus, **(C)** is correct. No such luck with **(A)**. Don’t be fooled: all talk of genre and influence goes beyond the bounds of the passage. You run into a similar problem in **(B)**. Aesthetic value, supreme or otherwise, takes your eyes off the main focus of paragraph 3. The author, in short, has nothing to say about **(B)**. In sum, **(A)** and **(B)** are outside the scope. On the face of it, **(D)** looks pretty good. True, the author is worrying about something in Mandel’s definition. However, he is not worrying about criteria—only about one criterion (the inevitability requirement, in fact). Consequently, **(D)** is incorrect. Turning to **(E)**, we don’t see much to recommend it. For one thing, the author is not defending conclusions (she is, as the question tells you, simply voicing dissatisfaction). For another, she is not pointing out a trap that Mandel is falling into.

## 20. E

To begin understand the scope of the question squarely before you. The question has to do with the whole passage, not with one of its parts. Now think about the first two requirements. The first is that the protagonist is worthy of esteem; the second that he or she suffers greatly. Ask yourself: What do you think the author’s opinion about these two requirements is? Does he like them? Dislike them? It’s the first: he most likely thinks that they are good things. Evidence for the first part of this conclusion can be found in paragraph 3 where the author seems to look favorably on the characters in the modern tragedy *Three Sisters*. **(E)** puts this point even more delicately by making us see that both requirements are OK so long

as they don’t contradict the condition of powerlessness. Therefore, **(E)** is the correct answer. **(A)** is the opposite of the correct answer. The author provides no reason to believe that these requirements would not fit with the condition of powerlessness. With respect to **(B)**, the first condition isn’t at all at odds with the condition of powerlessness. The author implies as much in paragraph 3 when she shows that good characters in works of tragedy necessarily feel powerless. **(C)** is also incorrect. From all that you read in paragraph 3, you can reasonably conclude that the sisters do suffer a good deal. That leaves you with **(D)** to consider. **(D)** is without question quite tempting. Yet that both requirements should not figure prominently is outside the scope of the passage. You do have reason to believe that they should figure *in some way*, but we *can’t know* for sure *how prominently* they should figure. The answer is **(E)**.

## QUANTITATIVE REASONING 2

### SECTION 4 EXPLANATIONS

#### 1. D

The perimeter of  $ABC$  is 40 and the length of  $BC$  is 12, and you want to compare the length of  $AB$  with 14. In an isosceles triangle, there are two sides with equal length, but you don't know whether side  $BC$  is one of those sides or not. If side  $BC$  is the unequal side, there are two unknown sides plus 12, and they have a sum of 40, the perimeter. The two remaining sides have a sum of 28, so each is 14. That would mean that  $AB$  and  $AC$  would have length 14. Then the answer would be **(C)**. If  $BC$  is one of the equal sides, however, there are two sides with length 12 and a third unknown side, and the sum is 40. Because  $12 + 12$  is 24, the third side has length 16.  $AB$  could be one of the sides of length 12 or the side of length 16. There are three possible lengths for side  $AB$ —16, 14, and 12—so the answer is **(D)**.

#### 2. A

Plug 1 in for  $x$  and solve the equation for  $y$ . Perform the addition inside the parentheses first. You have  $1 + 3 = 4$  inside the parentheses.  $y = 4^2$ ,  $4^2$  is 16, and 16 is greater than 9, so the answer is **(A)**.

#### 3. B

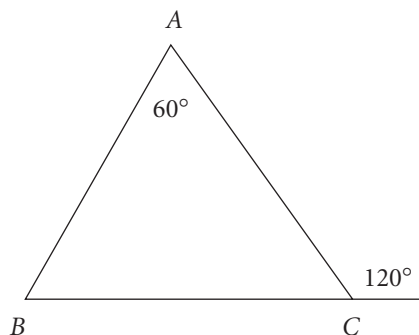
In both quantities, use the basic formula: rate  $\times$  time = distance. In Quantity A,  $40 \text{ mph} \times 4 \text{ hours}$  traveled gives you 160 miles. In Quantity B,  $70 \text{ mph} \times 2 \frac{1}{2} \text{ hours} = 175 \text{ miles}$ . As 175 is greater than 160, the answer is **(B)**.

#### 4. D

This is intended to conjure up a picture of heavy cookies in one bag and light grapes in the other, but you can't assume that because cookies are usually bigger than

grapes, these cookies weigh more than these grapes. Since you don't know how much each cookie and each grape weighs, you can't find the number of cookies or grapes, so the answer is **(D)**.

#### 5. C



Here you have triangle  $ABC$ —base  $BC$  has been extended on one side and there is an exterior angle drawn in and labeled  $120^\circ$ . You want to compare side lengths  $AB$  and  $BC$ . In any triangle, the largest side will be opposite the largest angle, so you want to see which of these sides is opposite a larger angle. Angle  $A$  is labeled  $60^\circ$ , but is angle  $C$  less than, equal to, or greater than  $60^\circ$ ? Notice that the adjacent angle is  $120^\circ$ —the two together form a straight line, so their sum is  $180^\circ$ . And  $180 - 120 = 60$ , so angle  $C$  is a  $60^\circ$  angle. Since the angles are equal, the sides are equal, and the answer is **(C)**.

#### 6. A

Notice the way the diagram is set up:  $a + b$  is the same as  $PQ$ . The equation is  $8a + 8b = 24$ . Divide both sides by 8. You end up with  $a + b = 3$ .  $PQ$  is 3 and because 3 is greater than 2, the answer is **(A)**. Note that you did not have to solve for  $a$  or  $b$  individually.

#### 7. A

All you know is that  $x$  is less than  $y$ , but even though you don't know their values, you know enough to determine a relationship. In Quantity A, you have  $y - x$ , the larger number minus

the smaller number, so you must get a positive difference, even if both numbers are negative. In Quantity B, you have the smaller number minus the larger number—this time the difference is negative. So you can determine a relationship—you know the answer is **(A)**, Quantity A is always greater than Quantity B.

**8. D**

Remember, area equals  $\frac{1}{2} \times \text{base} \times \text{height}$ . Both triangles have the same height, because they have the same apex point *A*. So the one with the larger base has the larger area. Which is bigger, *CB* or *DE*? You have no way to figure it out. You are not given any relationships or lengths for any of those segments, so the answer is **(D)**.

**9. D**

If the radius of each circle is 3, then the diameter of each circle is 6. Then *PS* and *QR* = 6, and *PQ* and *SR* = 12. The perimeter of rectangle *PQRS* = 6 + 12 + 6 + 12 = 36. The answer is **(D)**.

**10. D**

In this question, you have a fraction as a base and must consider various values for *x*, the exponent. Consider what happens when *x* = 0. Any base to the zero power equals 1; then  $1 - \left(\frac{1}{4}\right)^x = 1 - 1 = 0$ . You want the value of *x* that makes the expression greater than 0, so try *x* = 1.

$1 - \left(\frac{1}{4}\right)^x = 1 - \left(\frac{1}{4}\right) = \frac{3}{4}$  and the answer is **(D)**.

**11. B**

Begin with Cross Multiplication and use algebra to isolate  $\frac{q}{p}$ :

$$\frac{p-q}{p} = \frac{2}{7}$$

$$7(p-q) = 2p \quad \text{Cross Multiplication}$$

$$7p - 7q = 2p \quad \text{Remove parentheses.}$$

$$5p = 7q \quad \text{Add } 7q \text{ and subtract } 2p \text{ on both sides.}$$

$$\frac{5}{7} = \frac{q}{p} \quad \text{Divide both sides by } 7p.$$

Choice **(B)** is correct.

**12. 0.9**

The shaded region is a right triangle. So, use the numbers on the grid to calculate the base and height of the triangle. The length horizontally is  $(-2.0) - (-0.5) = -2.0 + 0.5 = -1.5$ . Simply use 1.5 as the base of the triangle. The height of the triangle is  $1.6 - 0.4 = 1.2$ . Use the equation for the area of a triangle:

$$A = \frac{1}{2}bh = \frac{1}{2} \times 1.5 \times 1.2 = 0.9$$

The area is **0.9**.

**13. D**

The question asks for the number that is 850 percent greater than  $8 \times 10^3$ . First, determine the value of  $8 \times 10^3$ . That number is 8,000. To 8,000, you need to add 850% of 8,000. Here's what the math looks like:

$$8,000 + 850\% \times 8,000 = 8,000 + 8.5 \times 8,000 = 8,000 + 68,000 = 76,000.$$

In scientific notation, this is  $7.6 \times 10^4$ , choice (D).

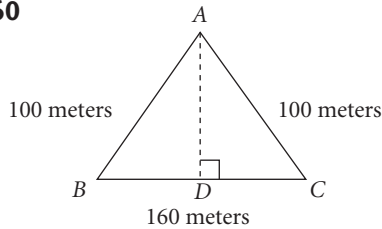
**14. B, C, E**

List the factors for each number to check for all correct choices.

Number	Factors	Number of Factors
4	1, 2, 4	3
6	1, 2, 3, 6	4
8	1, 2, 4, 8	4
12	1, 2, 3, 4, 6, 12	6
14	1, 2, 7, 14	4

So the correct choices are **(B)**, **(C)**, and **(E)**.

15. 60



You're trying to find the shortest distance in meters a person would walk to go from point A to a point on side BC of the triangular field represented in the diagram. To get the shortest distance from point A to side BC, draw a perpendicular line from point A to side BC. Call the new vertex point D. Now two smaller right triangles, ADC and ADB have been created.

From the diagram, length BC is 160 meters, AB is 100 meters and AC is 100 meters. Each of the two right triangles formed has 100 meters as the length of its hypotenuse. What does that tell you about triangle ABC? AB and AC have the same length, so this is an isosceles triangle. That means that when you drew in the perpendicular distance from A down to D, you split the isosceles triangle ABC into two identical right triangles. Length BD is the same as length CD. So each of them is half of 160 meters, or 80 meters. Each right triangle has an hypotenuse of 100 meters and one leg of 80 meters. This is a 3:4:5 right triangle, with each member of the ratio multiplied by 20. So AD must have length **60**, and the minimum distance is 60 meters.

16. E

The average is  $\frac{\text{The sum of terms}}{\text{The number of terms}}$ . Here you have  $y - z$  and the other number, which you can call  $x$ . The average of  $x$  and  $y - z$  is  $3y$ , so  $3y = \frac{x + y - z}{2}$ . Multiplying both sides by 2 gives  $6y = x + y - z$ . Subtracting  $y - z$  from both sides gives  $5y + z = x$ . So the other number,  $x$ , is  $5y + z$ , answer choice **(E)**.

17. B, D

Test each point. Substitute a value for  $x$  and compare the result to the given value for  $y$  in the ordered pair.

$$\text{Let } x = -3. \quad y = \frac{x^2}{x+1} = \frac{(-3)^2}{-3+1} = \frac{9}{-2} \neq -5$$

$$\text{Let } x = -2. \quad y = \frac{x^2}{x+1} = \frac{(-2)^2}{-2+1} = \frac{4}{-1} = -4$$

$$\text{Let } x = -1. \quad y = \frac{x^2}{x+1} = \frac{(-1)^2}{-1+1} = \frac{1}{0} \neq -3$$

$$\text{Let } x = 1. \quad y = \frac{x^2}{x+1} = \frac{1^2}{1+1} = \frac{1}{2}$$

$$\text{Let } x = 3. \quad y = \frac{x^2}{x+1} = \frac{3^2}{3+1} = \frac{9}{4} \neq 2\frac{1}{2}$$

So, the correct answers are **(B)** and **(D)**.

18. D

You're looking for the lowest ratio of males to females. In the double bar graph, the males outnumber females in each double bar, so you want the specialty in which the numbers of males and females are closest. Skimming the bar graphs, you can see that in pediatrics, the female graph and the male graph are closer than any of the others. Pediatrics **(D)** is the correct answer.

19. B

How many male general surgery physicians were under 35 years old? The pie chart breaks down general surgery physicians by age, so work with that. And because you're looking for a number of general surgery physicians, you know that you're going to have to find the total number of general surgery physicians, and then break it down according to the percentages on the pie chart.

The number of female general surgery physicians in the under-35 category represented 3.5 percent of all the general surgery

physicians. What this does is break that slice of the pie for under-35 into two smaller slices, one for men under 35 and one for women under 35. Now the whole slice for under-35-year-olds is 30 percent of the total, and the question states that the number of females under 35 is 3.5 percent of the total. So the difference between 30 percent and 3.5 percent (26.5 percent) must be the men in the under-35 category.

From the top graph, estimate the total number of general surgery physicians as 37,000 (35,000 male plus 2,000 female). Multiply 37,000 by 26.5%:  $0.265 \times 37,000 = 9,805$ , which is very close to **(B)**, the correct answer.

**20. E**

The bar graph doesn't give the total number of general practice physicians, but if you add the number of males to the number of females, you get the total number of GP physicians. To find the percent who are male, take the number of males and put it over the total number. There are about 2,000 women and about 23,000 men, making the total about 25,000. Well, if there are around 25,000 GP physicians altogether and 2,000 to 3,000 of them are female, that's around 10 percent. About 22,500 are male, which is 90 percent, **(E)**.

## ANALYTICAL WRITING SCORING RUBRIC

### 6: “Outstanding” Essay

- Insightfully presents and convincingly supports an opinion on the issue or a critique of the argument
- Communicates ideas clearly and is generally well organized; connections are logical
- Demonstrates superior control of language: grammar, stylistic variety, and accepted conventions of writing; minor flaws may occur

### 5: “Strong” Essay

- Presents well-chosen examples and strongly supports an opinion on the issue or a critique of the argument
- Communicates ideas clearly and is generally well organized; connections are logical
- Demonstrates solid control of language: grammar, stylistic variety, and accepted conventions of writing; minor flaws may occur

### 4: “Adequate” Essay

- Presents and adequately supports an opinion on the issue or a critique of the argument
- Communicates ideas fairly clearly and is adequately organized; logical connections are satisfactory
- Demonstrates satisfactory control of language: grammar, stylistic variety, and accepted conventions of writing; some flaws may occur

### 3: “Limited” Essay

- Succeeds only partially in presenting and supporting an opinion on the issue or a critique of the argument
- Communicates ideas unclearly and is poorly organized
- Demonstrates less than satisfactory control of language: contains significant mistakes in grammar, usage, and sentence structure

### 2: “Weak” Essay

- Shows little success in presenting and supporting an opinion on the issue or a critique of the argument
- Struggles to communicate ideas; essay shows a lack of clarity and organization
- Meaning is impeded by many serious mistakes in grammar, usage, and sentence structure

**1: “Fundamentally Deficient” Essay**

- Fails to present a coherent opinion and/or evidence on the issue or a critique of the argument
- Fails to communicate ideas; essay is seriously unclear and disorganized
- Lacks meaning due to widespread and severe mistakes in grammar, usage, and sentence structure

**0: “Unscorable” Essay**

- Completely ignores topic
- Attempts to copy the assignments
- Written in a foreign language or contains undecipherable text

**SAMPLE ESSAY RESPONSES****ISSUE ESSAY SAMPLE RESPONSE**

*At face value, the belief that “one should look upon any information described as ‘factual’ with skepticism since it may well be proven false in the future,” seems ludicrous almost to the point of threatening anarchy. Yet not only does this belief prove well justified, it is also the linchpin around which our complex, highly technical society creates and consolidates its advances.*

*Science itself provides the best evidence and examples in support of this statement. One need look no further than contemporary medicine to see how far we have come from the days when illness was perceived as a sign of moral weakness or as a punishment from on high. In fact, the most outstanding characteristic of what we call “the scientific method” amounts to endless questioning of received theory in search of a more comprehensive explanation of what we perceive to be true. This iterative style of inquiry (and re-inquiry) perpetuates an ongoing scientific dialogue that catalyzes further breakthroughs in the developed world.*

*Furthermore, advances made through constant questioning are not limited to the scientific arena: The skeptical attitudes of ancient Greek philosophers, as well as those of Renaissance mariners, 19th century suffragists, and 20th century civil rights activists, have left the world a richer and more hopeful place. By refusing to accept the world as explained by contemporary “fact,” these doubters helped give birth to societies and cultures in which human potential and accomplishment have been enabled to an unprecedented degree.*

In contrast, those societies that cultivate adherence to received belief and a traditional non-skeptical approach have advanced very little over the centuries. In Tibet, for instance, the prayer wheels spin endlessly around a belief system as secure and unquestioning as the Himalayas themselves. While there may very well be things worth learning from such a society, Tibet has proven to lack adaptability and expansiveness and prefers to turn inward, away from the modern world. Such introspection has given Tibet neither immunity nor an array of defenses in the face of contemporary medical, social, and political problems. Thus, cultural inflexibility regarding received wisdom and convention comes with a price.

To conclude, it seems clear from the above discussion that a healthy skepticism remains the hallmark of Western epistemology as we face the future. A close look at the statement reveals that it is not advocating the wholesale rejection of orthodox thinking, but rather that we be open to redefining our assumptions. As the basis of our resiliency and creativity, this attitude offers the most positive prognosis for a society that revels in the solution of conundrums that its own constant questioning brings continually into view.

## ARGUMENT ESSAY SAMPLE RESPONSE

In this memo, the owner of the Juniper Café concludes that cutting hours is the “best strategy for us to save money and remain in business without having to eliminate jobs.” While the café’s employees are undoubtedly grateful for the intent of the memo, they may see that its logic is flawed. First, the memo does not provide enough supporting evidence to prove that the money saved by cutting hours would exceed the money lost by losing early-morning and weekend clients. Second, the owner does not seem to evaluate other options that would either cut back on overhead or change the café’s operation to bring in more revenue.

First, the owner relies on an unproven assumption about the cause of the overhead. He concludes, without justifying, that being open too many hours is causing too much overhead expense. There may be other causes, however, such as waste in other areas of management. While it is true that reducing café hours would save money spent on utilities, employee wages, and other operating costs, there is no evidence that those savings would outweigh the café’s loss of business. The owner’s message fails to give details of operating costs, wages, and utilities saved if the café is closed for the hours suggested by the memo. Perhaps the highest utility expenses are actually incurred between noon and 3 p.m., when the sun is the hottest and the café’s air conditioning and refrigeration are most in use. The owner needs to do more research, including the habits and demography of the town. For example, since the café is located in the

downtown area, perhaps *increasing* the number of hours the café is open would be a better solution.

Yes, it would cost more in overhead, but doing so might, in fact, make much more money for the café. Say, for instance, the Juniper becomes the only restaurant open on Friday and Saturday date nights, after the football games and movies let out. Second, the owner of the Juniper Café is not considering that the café serves a small American city. Cutting early-morning hours at a café, in a downtown area, where businesspeople and city workers most likely stop for coffee or breakfast on their way to work, seems very short-sighted and ill-informed. Are there one or more other cafés that will gladly steal business from 6 a.m. to 8 a.m. weekdays and that will perhaps win the permanent loyalty of those customers for lunch and dinner?

Furthermore, the owner does not seem to have evaluated other options to save the café. There are other places where overhead costs could potentially be cut. Certainly the owner would benefit from a brainstorming session with all employees, to get other ideas on the table. Maybe a new, lower-rent freezer storage facility is nearby. Maybe employees can suggest cutting waste in the purchasing department or dropping services the café doesn't need. It stands to reason that there is a plurality of ways to decrease overhead, aside from simply cutting hours.

In conclusion, the memo as it stands now does not logically prove that reduction in those particular hours will result in financial and future success for the café. There are several unstated assumptions upon which the argument turns, principally the assertion that simply being open for a certain number of hours is causing crippling overhead expenses. The owner's argument would profit enormously from further research, which may affect the hours he chooses to cut. Customer polling could show that few people eat or want coffee in that part of town between 2 p.m. and 5 p.m., and the café could be closed between lunch and dinner, adding flex hours or overlapping shifts for the staff. The memo lacks outlining what other restaurant services are available in the area and how or if they affect the 6 a.m. to 8 a.m. block and weekend hours. Once the marketing research and brainstorming is complete, the owner of the Juniper Café will make a better informed choice for his café's operating hours.



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