

## The Official Guide for GMAT Review, 2017

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### 1st Printing

#### Chapter 3

Page 20, #3:

3. The sequence  $a_1, a_2, a_3, \dots, a_n, \dots$  is such that

$$a_n = \frac{a_{n-1} + a_{n-2}}{2} \text{ for all } n \geq 3. \text{ If } a_3 = 4 \text{ and}$$

$a_5 = 20$  what is the value of  $a_6$ ?

- (A) 12
- (B) 16
- (C) 20
- (D) 24
- (E) 28

Page 22, #19:

19. If  $k$  is an integer and  $2 < k < 7$ , for how many different values of  $k$  is there **in** a triangle with sides of lengths 2, 7, and  $k$ ?

Page 25, #35:

35. What is the value of  $w + q$ ?

- (1)  $3w = 3 - 3q$
- (2)  $5w + 5q = 5$

Page 45, #1 Answer Explanation:

- (A)  $5(4.00) + 15.90$
- (B)  $5(4.00) + 15.95$
- (C)  $5(4.00) + 16.00$
- (D)  $5(4.00 - 0.01) + 15.90$
- (E)  $5(4.00 - 0.05) + 15.95$

Page 46, #3 Answer Explanation:

$$20 = \frac{a_4 + 4}{2} \quad \text{substitute known values}$$

$$40 = a_4 + 4 \quad \text{multiply both sides}$$

$$36 = a_4 \quad \text{subtract 4 from both sides}$$

Then, letting  $a_n = a_6$ , substitute the known values:

Page 48, #7 Answer Explanation:

(1) If Harry is to be secretary, he first CANNOT have been chosen for president, and then he must be chosen for secretary. The probability that he will be chosen for president is  $\frac{1}{10}$ , so the probability of his NOT being chosen for president is  $1 - \frac{1}{10} = \frac{9}{10}$ . Then, the

Page 48, #8 Answer Explanation:

$$\begin{aligned} \text{average} &= \frac{\frac{2}{5}d + \frac{1}{10}d}{2} = \frac{\frac{4}{10}d + \frac{1}{10}d}{2} = \frac{\frac{5}{10}d}{2} = \\ &= \frac{1}{2}d \left( \frac{1}{2} \right) = \frac{1}{4}d \end{aligned}$$

Page 49, #10 Answer Explanation:

$$\begin{aligned} a + x + z &= 180 \\ b + v + y &= 180 \\ c + x + w &= 180 \\ d + v + z &= 180 \\ e + y + w &= 180 \end{aligned}$$

Summing these 5 equations gives:

Page 50, #12 Answer Explanation:

### Column 1

#### Arithmetic; Algebra Percents

#### Simultaneous equations

Because  $y$  is a positive integer,  $y$  percent is notated as  $\frac{y}{100}$ . According to the problem,

$$y = 0.50(0.50x) \text{ and } \left( \frac{y}{100} \right) x = 100.$$

## Column 2

$$x(0.25x) = 10,000$$

$$0.25x^2 = 10,000 \quad \text{simplify left side}$$

Page 50, #13 Answer Explanation:

13. If  $s$  and  $t$  are positive integers such that  $\frac{s}{t} = 64.12$ , which of the following could be the remainder when  $s$  is divided by  $t$ ?

Page 51, #15 Answer Explanation:

### Arithmetic Properties of numbers

The prime numbers less than 20 are 2, 3, 5, 7, 11, 13, 17, and 19. Their product is 9,699,690

(arrived at as follows:

$$2 \times 3 \times 5 \times 7 \times 11 \times 13 \times 17 \times 19 = 9,699,690).$$

This is closest to  $10,000,000 = 10^7$

$$(10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 10,000,000).$$

Page 54, #23 Answer Explanation:

III.  $\frac{24}{18} = 1\frac{1}{3}$  18 is NOT a factor of 24  
NEED NOT be a multiple of 18

Page 56, #27 Answer Explanation:

If, however, the cost of each minute after the first minute were \$0.15, then the cost of the first minute would be \$0.65. Then \$6.50 – \$0.65 would be \$5.85, and this in turn, when divided by \$0.15,

Page 58, #33 Answer Explanation:

(1) If  $5^x < 1$ , then  $\frac{5^{x+2}}{25} < 1$  since

$$\frac{5^{x+2}}{25} = \frac{5^x \cdot 5^2}{25} = 5^x; \text{ SUFFICIENT.}$$

Page 60, #40 Answer Explanation:

- (1)  $k = 0.8p$
- (2)  $k = 8$

**Arithmetic Interest problem**

With simple annual interest, the formula to use is interest = principal  $\times$  rate  $\times$  time. It is given

that  $\$500 = \$5,000 \times \frac{p}{100} \times 1$  (year), so  
 $p = 10$  percent interest.

- (1) If  $p$  is 10 percent, then  $k = 0.8 p$  is 0.08. Using the same formula, the time is again 1 year; the interest is the same amount; and the rate is 0.08, or 8 percent. Thus,  $\$500 = \text{principal} \times 0.08 \times 1$ , or principal  $\$6,250$ ; SUFFICIENT.

Page 60, #41 Answer Explanation:

If  $\frac{x+y}{z} > 0$ , then either one of two cases holds true. Either  $(x+y) > 0$  and  $z > 0$ , or  $(x+y) < 0$  and  $z < 0$ . In other words, in order for the term to

Page 69, #56 Answer Explanation:

- D The author agrees that both the brain and the stomach act as processors; believes that the computer, a nonmechanical device, can simulate the brain; and offers a way

Page 71, #61 Answer Explanation:

- 61. The view mentioned in line 17 of the passage refers to which of the following?

**Inference**

To find what this appearance of view refers to, it is necessary to look back to the beginning of the

Page 72, #61 Answer Explanation:

- D A number of women historians have said that working-class mothers did not always share the view of middle-class women reformers about child labor.

Page 72, #62 Answer Explanation:

### Evaluation

In lines 10–12, the author asserts that child labor laws *pitted women of different classes against one another*. The view of the middle-class women reformers is stated, and then, to show that

Page 73, #64 Answer Explanation:

### Supporting ideas

This question is based on information explicitly stated in the final sentence of the passage.

Women reformers viewed *child labor as a terribly exploitative practice* but they failed to take account of the economic needs of working-class families.

Page 84, #75 Answer Explanation:

- A The contaminated vaccine is said to have caused *some* cases, not *most*; the question remains why the survey results pose no obstacle to the researchers' claim.

Page 92, #83 Answer Explanation:

### Column 1:

#### Comparison-contrast; Modifying clause

The contrast introduced by *unlike* must be logical and clear. Contrasting *the buildings in Mesopotamian cities* with *the same basic plan* does not make sense; *Mesopotamian cities* should be contrasted with *the cities of the Indus Valley*. Also, it needs to be clear that it was the *buildings* in the cities that were *arranged haphazardly* rather than the *cities*. The second half of the sentence needs *houses* *were laid out* to be parallel in structure to *and houses and walls were built*.

### Column 2:

- B Illogically contrasts *the buildings in Mesopotamian cities* with *the same basic plan*; does not clarify what *which were haphazard in arrangement* modifies.

Page 93, #84 Answer Explanation:

### Logical predication; Rhetorical construction

The pronoun *it* (*it saves seven dollars*) has no

Page 94, #85 Answer Explanation:

*the bird itself* is a noun phrase and matches the noun phrases *grassy fields* and *old pastures*.

- A Illogically compares *the sandpipers vanishing* to *grassy fields and old pastures*; omits apostrophe in *sandpipers' vanishing*; wordy.
- B **Correct.** This sentence properly compares *the bird itself* to *grassy fields and old pastures*;

Page 97, #90 Answer Explanation:

*students*, and *groups*. To which of these three does *they* refer? It would appear that the *universities* must

Page 99, #94 Answer Explanation:

introduced by *that*. The verb tenses are logical and parallel: *who have been blind* and *who have never*

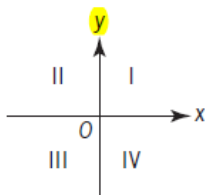
Chapter 4 ([Click here to download a fully revised pdf of Chapter 4.](#))

## Chapter 5

Page 156, #46:

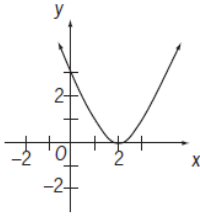
46. Which of the following equations is NOT equivalent to  $10y^2 = (x + 2)(x - 2)$ ?
- (A)  $30y^2 = 3x^2 - 12$
- (B)  $20y^2 = (2x - 4)(x + 2)$
- (C)  $10y^2 + 4 = x^2$
- (D)  $5y^2 = x^2 - 2$
- (E)  $y^2 = \frac{x^2 - 4}{10}$

Page 157, #49:



49. The graph of the equation  $xy = k$ , where  $k < 0$ , lies in which two of the quadrants shown above?

Page 189, #8 Answer Explanation:



8. On the graph above, when  $x = \frac{1}{2}$ ,  $y = 2$ ; and when  $x = 1$ ,  $y = 1$ . The graph is symmetric with respect to the vertical line at  $x = 2$ . According to the graph, when  $x = 3$ ,  $y =$

Page 205, #63 Answer Explanation:

63. Which of the following expressions can be written as an integer?

I.  $(\sqrt{82} + \sqrt{82})^2$

II.  $(82)(\sqrt{82})$

III.  $\frac{(\sqrt{82}\sqrt{82})}{82}$

Page 253, #202 Answer Explanation:

$$\left( \frac{(\text{ratio after increases}) - (\text{ratio before increases})}{(\text{ratio before increases})} \times 100 \right) \%$$

$$= \left[ \left( \frac{(\text{ratio after increases})}{(\text{ratio before increases})} - 1 \right) \times 100 \right] \%$$

Page 256, #209 Answer Explanation:

Alternatively, the number of ways to select the locations of the 2 occurrences of the

letter I can be determined by using  $\binom{5}{2} - 4 =$

$\frac{5!}{(2!)(3!)} - 4 = 10 - 4 = 6$ , which is the number of

Page 266, #229 Answer Explanation:

Alternatively,  $\frac{(x+2)(x+3)}{x-2}$  will be zero if and

only if  $(x+2)(x+3) = 0$ , which has two integer solutions less than 5, namely,  $x = -2$  and  $x = -3$ .

Page 266, #230 Answer Explanation:

230. The value of  $\frac{2^{-14} + 2^{-15} + 2^{-16} + 2^{-17}}{5}$  is how many times the value of  $2^{-17}$ ?

- (A)  $\frac{3}{2}$
- (B)  $\frac{5}{2}$
- (C) 3
- (D) 4
- (E) 5

**Arithmetic Negative exponents**

If the value of  $\frac{2^{-14} + 2^{-15} + 2^{-16} + 2^{-17}}{5}$  is  $x$  times the value of  $2^{-17}$ , then

$$\begin{aligned} x(2^{-17}) &= \frac{2^{-14} + 2^{-15} + 2^{-16} + 2^{-17}}{5} \\ x &= \frac{\frac{2^{-14} + 2^{-15} + 2^{-16} + 2^{-17}}{5}}{2^{-17}} \\ &= \frac{2^{-14} + 2^{-15} + 2^{-16} + 2^{-17}}{5} \times 2^{17} \\ &= \frac{(2^{-14} + 2^{-15} + 2^{-16} + 2^{-17}) \times 2^{17}}{5} \end{aligned}$$

**Chapter 6**

Page 312, #285 Answer Explanation:

**Arithmetic Applied problems**

Since the rate at which the conveyor belt moves is given as 120 centimeters per second, which is equivalent to  $\frac{120}{100} = 1.2$  meters per second, the conveyor will move less than 90 meters if it moves for less than  $\frac{90}{1.2} = 75$  seconds.

Page 321, #309 Answer Explanation:

- (1) Since the charge for a 2-mile ride is \$0.90,  $f + m = 0.90$ , and so  $f + 9m = 0.90 + 8m$ , but the value of  $m$  is unknown; NOT sufficient.

Page 335, #342 Answer Explanation:

Given (1) and (2) together, let  $AC = CB = x$  be the length of the legs of the isosceles triangle  $ABC$ . Then, from  $(AC)^2 = 2(AD)^2$ , it follows that  $x^2 = 2(AD)^2$ , and hence  $AD = \frac{x}{\sqrt{2}}$ . Also, by the

Pythagorean theorem applied to  $\triangle ABC$ , it follows that  $AB = \sqrt{x^2 + x^2} = x\sqrt{2}$ . Therefore, it follows that  $(AC)(CB) = (x)(x) = x^2$  and

$$(AD)(AB) = \left(\frac{x}{\sqrt{2}}\right)(x\sqrt{2}) = x^2, \text{ and so}$$

$$(AC)(CB) = (AD)(AB).$$

## Chapter 7

Page 394, Passage:

- (25) and relying on general, sweeping economic indicators may mask substantial variations among these different enterprises. For example, recent analyses of previously unexamined data on textile manufacturing in Brazil and Mexico suggest that the
- (30) Great Depression had a more severe impact on this Latin American industry than scholars had recognized.

Page 394, #460:

- (E) demonstrate that the Great Depression had a more severe impact on industry in Latin America than in certain other regions

Page 429, #412 Answer Explanation:

### Main idea

This question depends on understanding the passage as a whole. The passage begins by describing a long-held belief regarding humans' circadian rhythms: that the SCNs control them. It then goes on to explain that new findings have led scientists to believe that other organs and tissues may be involved in regulating the body's circadian rhythms as well.

Page 459, #462 Answer Explanation:

### Application

The question involves applying information from outside the passage to a claim made by the author. The text in lines 25–27 asserts that broad economic indicators pertaining to a nation or region can obscure differences between individual firms or industries within that nation or region. The question asks which evidence would most strengthen the support for that conclusion.

- A This refers only to the relationship between a single industry's profits and its output, not to general economic indicators.
- B **Correct.** The phrase *a national recession* refers to a general economic indicator.

Page 482, #503 Answer Explanation:

- B The passage refers to the costs of clinical trials only as they concern the collection, storage, and analysis of data collected from participants.

Page 504, #542 Answer Explanation:

- D **Correct.** The tunneling particle could have as low a speed in thicker barriers as in thinner ones and simply take longer to make its way through a thicker barrier.

## Chapter 8

Page 570, #565 Answer Explanation:

565. Physician: The hormone melatonin has shown promise as a medication for sleep disorders when taken in synthesized form. Because the long-term side effects of synthetic melatonin are unknown, however, I cannot recommend its use at this time.

Patient: Your position is inconsistent with your usual practice. You prescribe many medications that you know have serious side effects, so concern about side effects cannot be the real reason you will not prescribe melatonin.

The patient's argument is flawed because it fails to consider that

## Chapter 9

Page 676, Diction, line 19:

Correct: "There's nothing like biking on a warm, autumn day." Incorrect: "There's nothing as biking on a warm, autumn day."

Page 679, lines 2, 6, 19, 23, 27, 31:

*Past perfect:* This verb form is used with *had* to show the order of two events that took place in the past.

*Example:*

Correct: "By the time I left for school, the cake had been baked."

*Future perfect:* Used with *will have*, this verb form describes an event in the future that will precede another event.

*Example:*

Correct: "By the end of the day, I will have studied for all my tests."

*Present perfect progressive:* Used with *have been* or *has been*, this verb tense describes something that began in the past, continues into the present, and may continue into the future.

*Example:*

Correct: "The student has been studying hard in the hope of acing the test."

*Past perfect progressive:* Used with *had been*, this verb form describes an action of some duration that was completed before another past action occurred.

*Example:*

Correct: "Before the fire alarm rang, the student had been studying."

*Future perfect progressive:* Used with *will have been*, this verb form describes a future, ongoing action that will occur before a specified time.

*Example:*

Correct: "By the end of next year, the students will have been studying math for five years."

Page 690, #712:

712. In the early part of the twentieth century, many vacationers found that driving automobiles and sleeping in tents allowed them to enjoy nature close at hand and tour at their own pace, with none of the restrictions of passenger trains and railroad timetables or with the formalities, expenses, and impersonality of hotels.

Page 730, #703 Answer Explanation:

703. Written early in the French Revolution, Mary Wollstonecraft's *A Vindication of the Rights of Man* (1790) and *A Vindication of the Rights of Woman* (1792) attributed Europe's social and political ills to be the result of the dominance of aristocratic values and patriarchal hereditary privilege.

Page 748, #734 Answer Explanation:

**B** **Correct.** The three activities are presented in parallel form: *creation of Buddha images* and *construction and decoration of the temples*.

Page 755, #747 Answer Explanation:

**C** *It is so genetically similar* is incorrect because there is no explicit statement of what the ant is similar to.