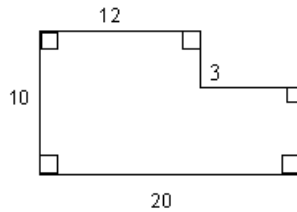


Sample Questions and answers:

1. $6.09 - 4.693 =$

- (A) 1.397
- (B) 1.403
- (C) 1.407
- (D) 1.497
- (E) 2.603



2. What is the area of the region enclosed by the figure above?

- (A) 116
- (B) 144
- (C) 176
- (D) 179
- (E) 284

3. If $p = 0.2$ and $n = 100$, then $\sqrt{\frac{p(1-p)}{n}}$

- (A) $-\sqrt{0.002}$
- (B) $\sqrt{0.02} - 0.02$
- (C) 0
- (D) 0.04
- (E) 0.4

4. If each of 4 subsidiaries of Corporation R has been granted a line of credit of \$700,000 and each of the other 3 subsidiaries of Corporation R has been granted a line of credit of \$112,000, what is the average (arithmetic mean) line of credit granted to a subsidiary of Corporation R ?

- (A) \$1,568,000
- (B) \$448,000
- (C) \$406,000
- (D) \$313,600
- (E) \$116,000

5. If x is a number such that $x^2 - 3x + 2 = 0$ and $x^2 - x - 2 = 0$, what is the value of x ?

- (A) -2
- (B) -1

- (C) 0
- (D) 1
- (E) 2

6. In traveling from a dormitory to a certain city, a student went $\frac{1}{5}$ of the way by foot, $\frac{2}{3}$ of the way by bus, and the remaining 8 kilometers by car. What is the distance, in kilometers, from the dormitory to the city?

- (A) 30
- (B) 45
- (C) 60
- (D) 90
- (E) 120

7. A certain elevator has a safe weight limit of 2,000 pounds. What is the greatest possible number of people who can safely ride on the elevator at one time with the average (arithmetic mean) weight of half the riders being 180 pounds and the average weight of the others being 215 pounds?

- (A) 7
- (B) 8
- (C) 9
- (D) 10
- (E) 11

8. After paying a 10 percent tax on all income over \$3,000, a person had a net income of \$12,000. What was the income before taxes?

- (A) \$13,300
- (B) \$13,000
- (C) \$12,900
- (D) \$10,000
- (E) \$9,000

9. $1 - [2 - (3 - [4 - 5] + 6) + 7] =$

- (A) -2
- (B) 0
- (C) 1
- (D) 2
- (E) 16

10. The price of a model *M* camera is \$209 and the price of a special lens is \$69. When the camera and lens are purchased together, the price is \$239. The amount saved by purchasing the camera and lens together is approximately what percent of the total price of the camera and lens when purchased separately?

- (A) 14%
- (B) 16%
- (C) 29%
- (D) 33%
- (E) 86%

11. If 0.497 mark has the value of one dollar, what is the value to the nearest dollar of 350 marks?

- (A) \$174
- (B) \$176
- (C) \$524
- (D) \$696
- (E) \$704

12. A right cylindrical container with radius 2 meters and height 1 meter is filled to capacity with oil. How many empty right cylindrical cans, each with radius $\frac{1}{2}$ meter and height 4 meters, can be filled to capacity with the oil in this container?

- (A) 1 (B) 2 (C) 4
(D) 8 (E) 16

13. If a sequence of 8 consecutive odd integers with increasing values has 9 as its 7th term, what is the sum of the terms of the sequence?

- (A) 22 (B) 32 (C) 36
(D) 40 (E) 44

14. A rectangular floor is covered by a rug except for a strip p meters wide along each of the four edges. If the floor is m meters by n meters, what is the area of the rug, in square meters?

- (A) $mn - p(m + n)$
(B) $mn - 2p(m + n)$
(C) $mn - p^2$
(D) $(m - p)(n - p)$
(E) $(m - 2p)(n - 2p)$

15. Working alone, R can complete a certain kind of job in 9 hours. R and S , working together at their respective rates, can complete one of these jobs in 6 hours. In how many hours can S , working alone, complete one of these jobs?

- (A) 18 (B) 12 (C) 9
(D) 6 (E) 3

16. A family made a down payment of \$75 and borrowed the balance on a set of encyclopedias that cost \$400. The balance with interest was paid in 23 monthly payments of \$16 each and a final payment of \$9. The amount of interest paid was what percent of the amount borrowed?

- (A) 6%
(B) 12%
(C) 14%
(D) 16%
(E) 20%

17. If $x \neq 0$ and $x = \sqrt{4xy - 4y^2}$, then, in terms of y , $x =$

- (A) $2y$
(B) y
(C) $\frac{y}{2}$
(D) $\frac{-4y^2}{1 - 2y}$
(E) $-2y$

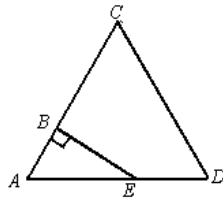
18. Solution Y is 30 percent liquid X and 70 percent water. If 2 kilograms of water evaporate from 8 kilograms of solution Y and 2 kilograms of solution Y are added to the remaining 6 kilograms of liquid, what percent

of this new solution is liquid X?

- (A) 30%
- (B) $33\frac{1}{3}\%$
- (C) $37\frac{1}{2}\%$
- (D) 40%
- (E) 50%

19. $\frac{1}{\frac{1}{0.03} + \frac{1}{0.37}} =$

- (A) 0.004
- (B) 0.02775
- (C) 2.775
- (D) 3.6036
- (E) 36.036



20. If each side of $\triangle ACD$ above has length 3 and if AB has length 1, what is the area of region $BCDE$?

- (A) $\frac{9}{4}$
- (B) $\frac{7}{4}\sqrt{3}$
- (C) $\frac{9}{4}\sqrt{3}$
- (D) $\frac{7}{2}\sqrt{3}$
- (E) $6 + \sqrt{3}$

Answers:

- 1. A
- 2. C
- 3. D
- 4. B
- 5. E
- 6. C
- 7. D
- 8. B
- 9. D

- 10. A
- 11. E
- 12. C
- 13. B
- 14. E
- 15. A
- 16. D
- 17. A
- 18. C
- 19. B
- 20. B

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