

Sample Questions and Answers:

1. At the rate of \$7.50 per hour, how many hours must a person work to earn \$232.50?

- (A) 25
- (B) 27
- (C) 29
- (D) 30
- (E) 31

2. Each month for 6 months the amount of money in a benefit fund is doubled. At the end of the 6 months there is a total of \$640 in the fund. How much money was in the fund at the end of 3 months?

- (A) \$80
- (B) \$100
- (C) \$120
- (D) \$160
- (E) \$320

3.  $6[-2(6-9)+11-23]=$

- (A) -224
- (B) -108
- (C) -36
- (D) 24
- (E) 79

4. If  $\frac{2}{3} \times \frac{3}{5} \times \frac{5}{8} \times \frac{8}{n} = \frac{2}{10}$ , then  $n =$

- (A)  $\frac{1}{10}$
- (B)  $\frac{1}{5}$
- (C) 5
- (D) 10
- (E) 100

5. If  $d = 3.0641$  and  $\bar{d}$  is the number obtained by rounding  $d$  to the nearest hundredth, then  $d - \bar{d} =$

- (A) 0.0001
- (B) 0.0041
- (C) 0.0059
- (D) 0.0141
- (E) 0.0410

6. Mr. Jones drove from Town A to Town B in  $x$  hours. On the return trip over the same route, his average speed was twice as fast. Which of the following expresses the total number of driving hours for the round trip?

- (A)  $\frac{2}{3}x$

- (B)  $\frac{3}{2}x$   
(C)  $\frac{5}{3}x$   
(D)  $2x$   
(E)  $3x$
7. If 3 is the greatest common divisor of positive integers  $r$  and  $s$ , what is the greatest common divisor of  $2r$  and  $2s$ ?
- (A) 2  
(B) 3  
(C) 4  
(D) 6  
(E) 12
8. If  $x + y = 5$  and  $xy = 6$ , then  $\frac{1}{x} + \frac{1}{y} =$
- (A)  $\frac{1}{6}$   
(B)  $\frac{1}{5}$   
(C)  $\frac{5}{6}$   
(D)  $\frac{6}{5}$   
(E) 5
9. After 5 games, a rugby team had an average of 28 points per game. In order to increase the average by  $n$  points, how many points must be scored in a 6th game?
- (A)  $n$   
(B)  $6n$   
(C)  $28n$   
(D)  $28 + n$   
(E)  $28 + 6n$
10. On July 1, 1982, Ms. Fox deposited \$10,000 in a new account at the annual interest rate of 12 percent compounded monthly. If no additional deposits or withdrawals were made and if interest was credited on the last day of each month, what was the amount of money in the account on September 1, 1982?
- (A) \$10,200  
(B) \$10,201  
(C) \$11,100  
(D) \$12,100  
(E) \$12,544
11. How many prime numbers are less than 25 and greater than 10?
- (A) Three  
(B) Four  
(C) Five

- (D) Six
- (E) Seven

12. Erica has \$460 in 5- and 10-dollar bills only. If she has fewer 10- than 5-dollar bills, what is the least possible number of 5-dollar bills she could have?

- (A) 32
- (B) 30
- (C) 29
- (D) 28
- (E) 27

13. Which of the following is equivalent to the statement that 0.5 is between  $\frac{2}{n}$  and  $\frac{3}{n}$ ?

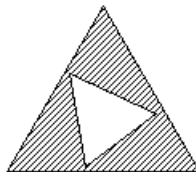
- (A)  $1 < n < 6$
- (B)  $2 < n < 3$
- (C)  $2 < n < 5$
- (D)  $4 < n < 6$
- (E)  $n > 10$

14. A corporation with 5,000,000 shares of publicly listed stock reported total earnings of \$7.20 per share for the first 9 months of operation. During the final quarter the number of publicly listed shares was increased to 10,000,000 shares, and fourth quarter earnings were reported as \$1.25 per share. What are the average annual earnings per share based on the number of shares at the end of the year?

- (A) \$1.83
- (B) \$2.43
- (C) \$4.85
- (D) \$8.45
- (E) \$9.70

15. In 1980 the government spent \$12 billion for direct cash payments to single parents with dependent children. If this was 2,000 percent of the amount spent in 1956, what was the amount spent in 1956? (1 billion = 1,000,000,000)

- (A) \$6 million
- (B) \$24 million
- (C) \$60 million
- (D) \$240 million
- (E) \$600 million

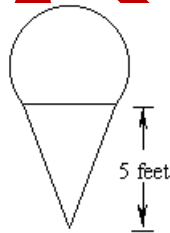


16. The triangles in the figure above are equilateral and the ratio of the length of a side of the larger triangle to the length of a side of the smaller triangle is  $\frac{2}{1}$ . If the area of the larger triangular region is  $K$ , what is the area of the shaded region in terms of  $K$ ?

- (A)  $\frac{3}{4}K$
- (B)  $\frac{2}{3}K$
- (C)  $\frac{1}{2}K$
- (D)  $\frac{1}{3}K$
- (E)  $\frac{1}{4}K$

17. Four cups of milk are to be poured into a 2-cup bottle and a 4-cup bottle. If each bottle is to be filled to the same fraction of its capacity, how many cups of milk should be poured into the 4-cup bottle?

- (A)  $\frac{2}{3}$
- (B)  $\frac{7}{3}$
- (C)  $\frac{5}{2}$
- (D)  $\frac{8}{3}$
- (E) 3



18. The outline of a sign for an ice-cream store is made by placing  $\frac{3}{4}$  of the circumference of a circle with radius 2 feet on top of an isosceles triangle with height 5 feet, as shown above. What is the perimeter, in feet, of the sign?

- (A)  $3\pi + 3\sqrt{3}$
- (B)  $3\pi + 6\sqrt{3}$
- (C)  $3\pi + 2\sqrt{33}$
- (D)  $4\pi + 3\sqrt{3}$
- (E)  $4\pi + 6\sqrt{3}$

19. The sum of the first 100 positive integers is 5,050. What is the sum of the first 200 positive integers?

- (A) 10,100
- (B) 10,200
- (C) 15,050

- (D) 20,050
- (E) 20,100

20. A merchant purchased a jacket for \$60 and then determined a selling price that equalled the purchase price of the jacket plus a markup that was 25 percent of the selling price. During a sale, the merchant discounted the selling price by 20 percent and sold the jacket. What was the merchant's gross profit on this sale?

- (A) \$0
- (B) \$3
- (C) \$4
- (D) \$12
- (E) \$15

Answers:

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

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