Sample Questions and Answers:

1. A certain club has 237 local branches, one national office, and one social service office. If each local branch has 2 officers, and each of the two other offices has 4 officers, how many officers does the club have altogether?

(A) 482   (B) 476   (C) 474
(D) 239   (E) 235

2. An employee is paid a salary of $300 per month and earns a 6 percent commission on all her sales. What must her annual sales be in order for her to have a gross annual salary of exactly $21,600?

(A) $22,896
(B) $26,712
(C) $300,000
(D) $330,000
(E) $360,000

3. Of the 1,000 students who entered College X as freshmen in September 1979,112 did not graduate in May 1983. If 962 students graduated in May 1983, how many of the graduates did not enter College X as freshmen in September 1979?

(A) 38   (B) 74   (C) 112
(D) 150   (E) 188
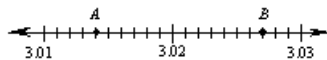
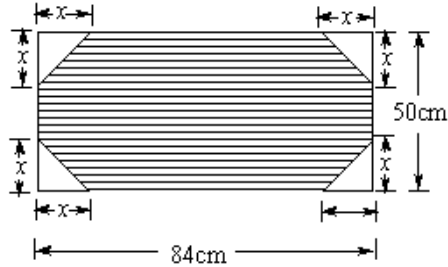4. On the number line above, what is the length of segment AB?

(A) 13
(B) 1.4
(C) 1.3
(D) 0.13
(E) 0.013

5. Which of the following has a value greater than 1?

(A) $\dfrac{2}{\sqrt{3}}$

(B) $\dfrac{\sqrt{2}}{2}$

(C) $\left(\dfrac{3}{4}\right)^2$

(D) $\left(\dfrac{7}{8}\right)^3$

(E) $2\left(\dfrac{3}{7}\right)$

6. If $\dfrac{m^2+m-3}{3}=1$, then m could equal

(A) –1
(B) 0
(C) 1
(D) 2
(E) 3

7. The figure above represents a rectangular desk blotter in a holder with dimensions shown. If $x = 8$ centimeters, what is the area, in square centimeters, of the shaded portion of the blotter?

   (A) 4,200
   (B) 4,184
   (C) 4,124
   (D) 4,072
   (E) 3,944

8. The number 25 is 2.5 percent of which of the following?

   (A) 10
   (B) 62.5
   (C) 100
   (D) 625
   (E) 1,000

9. Cottages at a resort are rented for half the summer price in each of the 3 spring months and one-third the summer price in each of the 6 fall and winter months. If each cottage brings in a total of $3,861 when rented for each of the 12 months of the year, what is the monthly rent for each of the 3 summer months?

   (A) $297
   (B) $594
   (C) $702
   (D) $858
   (E) $1,782

10. In 1980 John's salary was $15,000 a year and Don's salary was $20,000 a year. If every year thereafter. John receives a raise of $2,450 and Don receives a raise of $2,000, the first year in which John's salary will be more than Don's salary is

   (A) 1987
   (B) 1988
   (C) 1991
   (D) 1992

(E) 2000

11. Which of the following is equal to $\dfrac{351}{558}$?

(A) $\dfrac{7}{11}$

(B) $\dfrac{39}{62}$

(C) $\dfrac{19}{31}$

(D) $\dfrac{117}{196}$

(E) $\dfrac{107}{186}$

12. On a certain airline, the price of a ticket is directly proportional to the number of miles to be traveled. If the ticket for a 900-mile trip on this airline costs $120, which of the following gives the number of dollars charged for a k-mile trip on this airline?

(A) $\dfrac{2k}{15}$

(B) $\dfrac{2}{15k}$

(C) $\dfrac{15}{2k}$

(D) $\dfrac{15k}{2}$

(E) $\dfrac{40k}{3}$

13. If $\dfrac{n}{41}$ is 1 more than $\dfrac{m}{41}$, then $n =$

(A) $m - 41$
(B) $m + 1$
(C) $m + 41$
(D) $m + 42$
(E) $41m$

14. A discount of 20 percent on an order of goods followed by a discount of 10 percent amounts to

(A) less than one 15 percent discount
(B) the same as one 15 percent discount
(C) the same as one 30 percent discount
(D) less than a discount of 10 percent followed by a discount of 20 percent
(E) the same as a discount of 10 percent followed by a discount of 20 percent

15. If k is an even integer and p and r are odd integers, which of the following CANNOT be an integer?

(A) $\dfrac{r}{k}$

(B) $\dfrac{k}{p}$

(C) $\dfrac{p}{r}$

(D) $\dfrac{kp}{r}$

(E) $\dfrac{kr}{p}$

16. Today Al is 3 times as old as Pat, In 13 years, Al will be one year less than twice as old as Pat will be then. How many years old is Al today?

(A) 12
(B) 33
(C) 36
(D) 42
(E) 49

17. When the integer n is divided by 17, the quotient is x and the remainder is 5. When n is divided by 23, the quotient is y and the remainder is 14. Which of the following is true?

(A) $23x + 17y = 19$
(B) $17x - 23y = 9$
(C) $17x + 23y = 19$
(D) $14x + 5y = 6$
(E) $5x - 14y = -6$
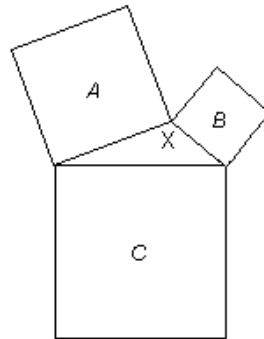
Note: Figure not drawn to scale.

18. In the figure above, three squares and a triangle have areas of A, B, C, and X as shown. If $A = 144$, $B = 81$, and $C = 225$, then $X =$

(A) 150
(B) 144
(C) 80
(D) 54
(E) 36

19. Three types of pencils, J, K, and L, cost $0.05, $0.10, and $0.25 each, respectively. If a box of 32 of these

pencils costs a total of $3.40 and if there are twice as many *K* pencils as *L* pencils in the box, how many *J* pencils are in the box?

(A) 6
(B) 12
(C) 14
(D) 18
(E) 20

20. Forty percent of the rats included in an experiment were male rats. If some of the rats died during the experiment and 30 percent of the rats that died were male rats, what was the ratio of the death rate among the male rats to the death rate among the female rats?

(A) $\dfrac{9}{14}$ (B) $\dfrac{3}{4}$ (C) $\dfrac{9}{11}$

(D) $\dfrac{6}{7}$ (E) $\dfrac{7}{8}$

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