

## Examrace

# SAT Questions and Answers Model Paper-5 Important Questions Section H

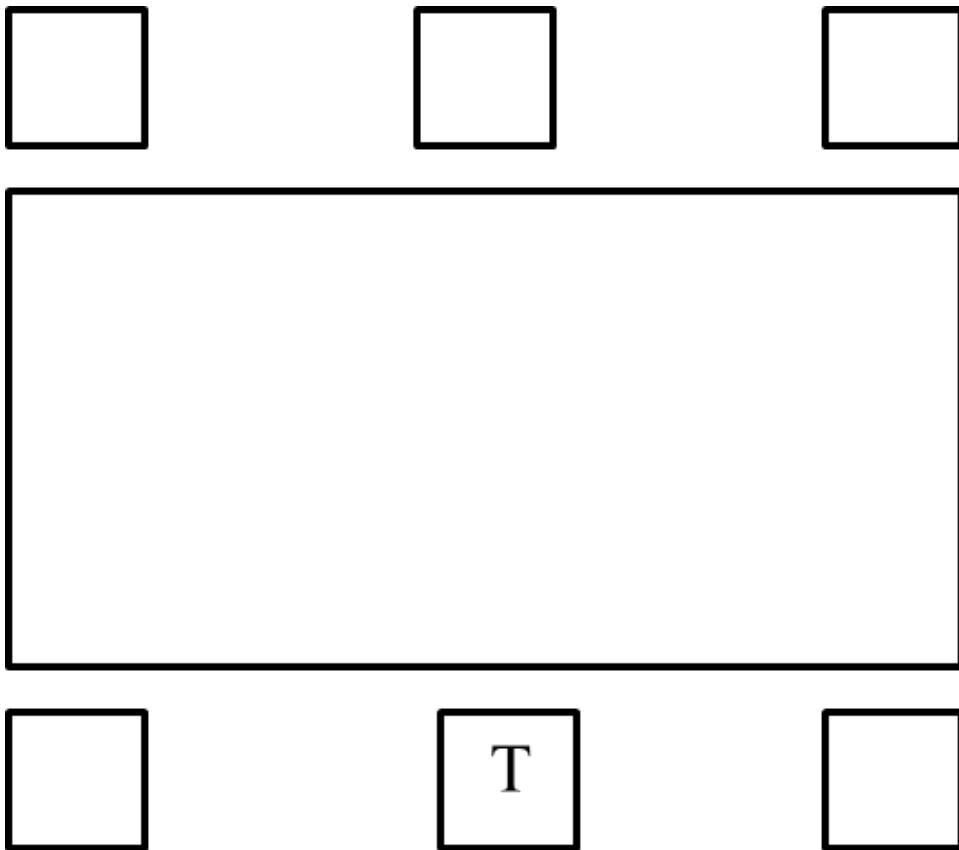
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### Section - H

**Time - 20 minutes**

### 16 Questions

1. Six friends sit at a rectangular table in the arrangement shown above, with Tom sitting in seat  $T$ . Kim cannot sit next to Tom or directly opposite him. In how many different seats can Kim sit?



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- (A) None
- (B) One
- (C) Two
- (D) Three
- (E) Four

2. If  $x = 3y$  and  $w = 3$ , what is the value of  $wy - x$ ?

- (A) 0
- (B) 1
- (C) 3
- (D) 6
- (E) 9

3. Mr. Hampton has an 8-foot-tall oak tree in his backyard. If the tree will grow  $n$  feet in height each year, which of the following represents the height of the tree, in feet, 4 years from now?

- (A)  $8 + n$
- (B)  $8 + 4n$
- (C)  $8(4n)$
- (D)  $8n$
- (E)  $4n$

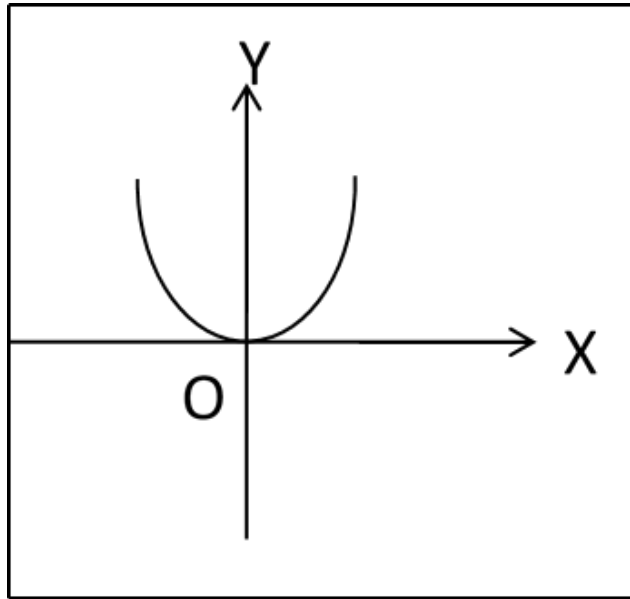
4. In the figure above, the length of  $\overline{AC}$  is 20 and the length of  $\overline{AB}$  is  $\frac{3}{5}$  the length of  $\overline{AC}$ . What is the length of  $\overline{BC}$ ?



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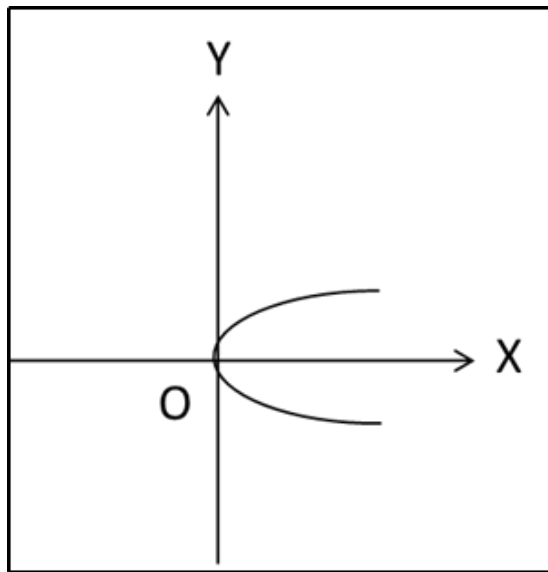
- (A) 6
- (B) 8
- (C) 12
- (D) 14
- (E) 16

5. Which of the following shows the result of reflecting the graph below about the  $x$ -axis?



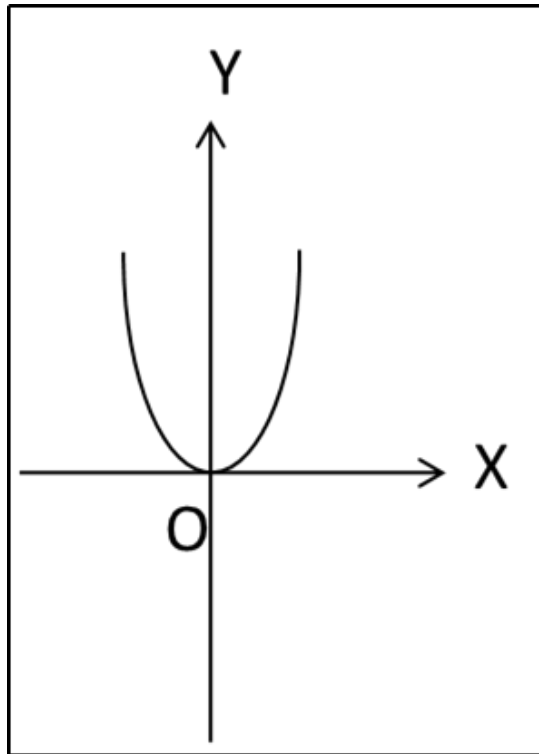
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A.



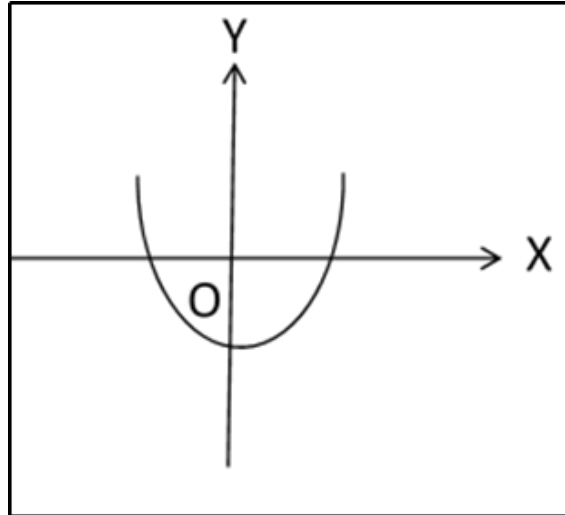
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B.



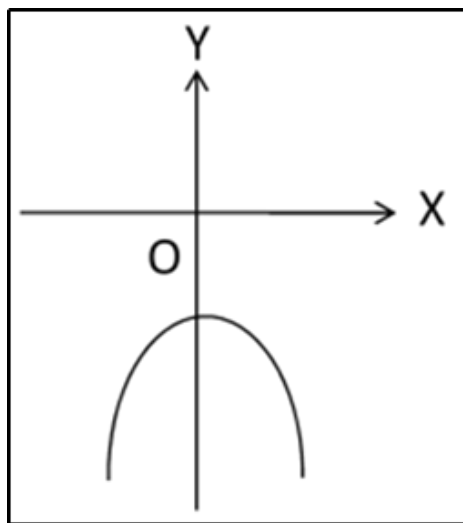
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C.



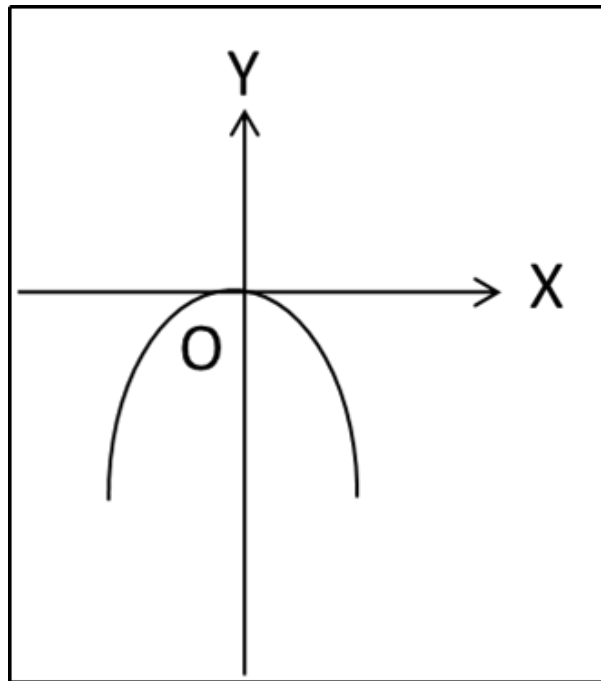
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D.



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E.



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6. Each of the following is equivalent to the equation above EXCEPT

$$3a + 7 = 4b - 3$$

(A)  $3a = 4b + 10$

(B)  $3a + 10 = 4b$

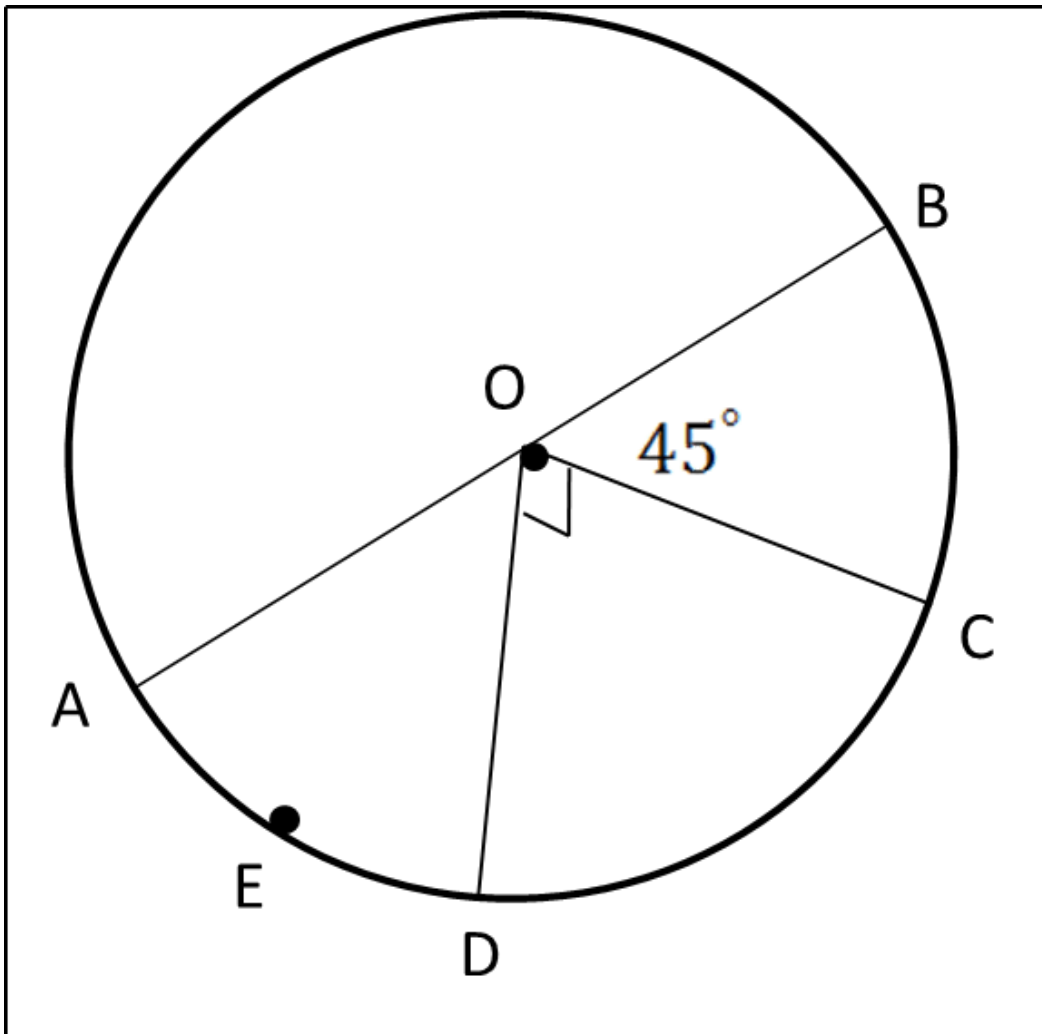
(C)  $3a + 3 = 4b - 7$

(D)  $10 = 4b - 3a$

(E)  $3a - 4b = -10$

7. In the circle above, point  $O$  is the center and  $\overline{AB}$  is a diameter. If the length of arc  $\widehat{ACB}$  is  $4\pi$ , what is the length of arc  $\widehat{AED}$  ?





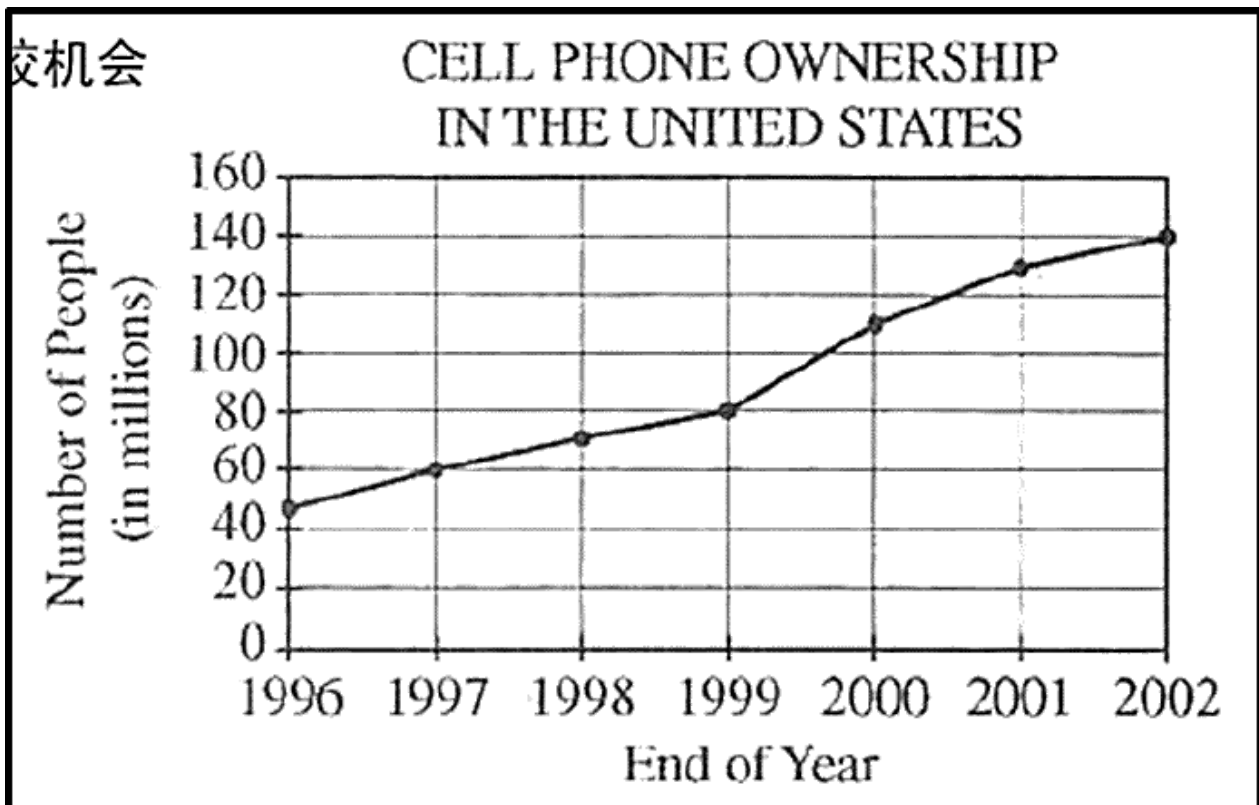
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(A)  $\pi$

(B)  $\frac{3\pi}{2}$

(C)  $2\pi$ (D)  $\frac{5\pi}{2}$ (E)  $3\pi$ 

8. The number of people in the United States, in millions, who owned a cell phone at the end of each year from 1996 through 2002 is shown in the line graph above. If the population of the United States at the end 2000 was approximately 280 million, which of the following is closest to the percent of the population that owned a cell phone at the end of 2000?



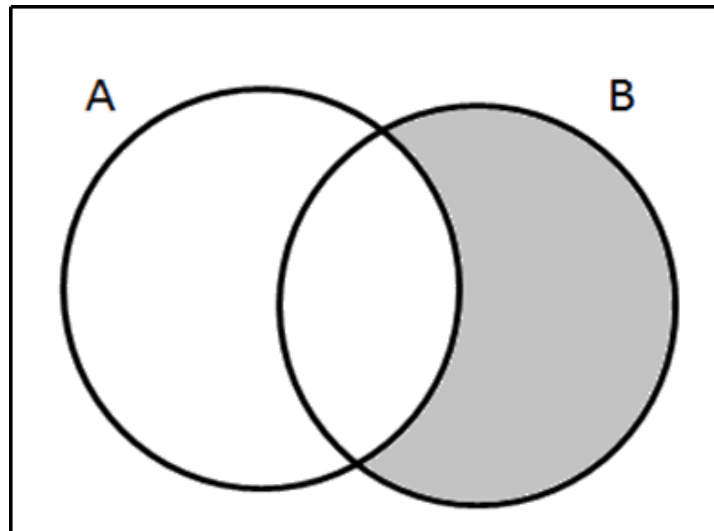
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- (A) 45 %
- (B) 40 %
- (C) 35 %
- (D) 30 %
- (E) 25 %

9. If a square has a side of length  $x + 4$  and a diagonal of length  $x + 8$ , what is the value of  $x$ ?

- (A) 4
- (B) 8
- (C) 16
- (D)  $4\sqrt{2}$
- (E)  $8\sqrt{2}$

10. In the Venn diagram below,  $A = \{1,2,3,4\}$  and  $B = \{2,4,6,8,10\}$ . How many integers are represented by the shaded region of the diagram?

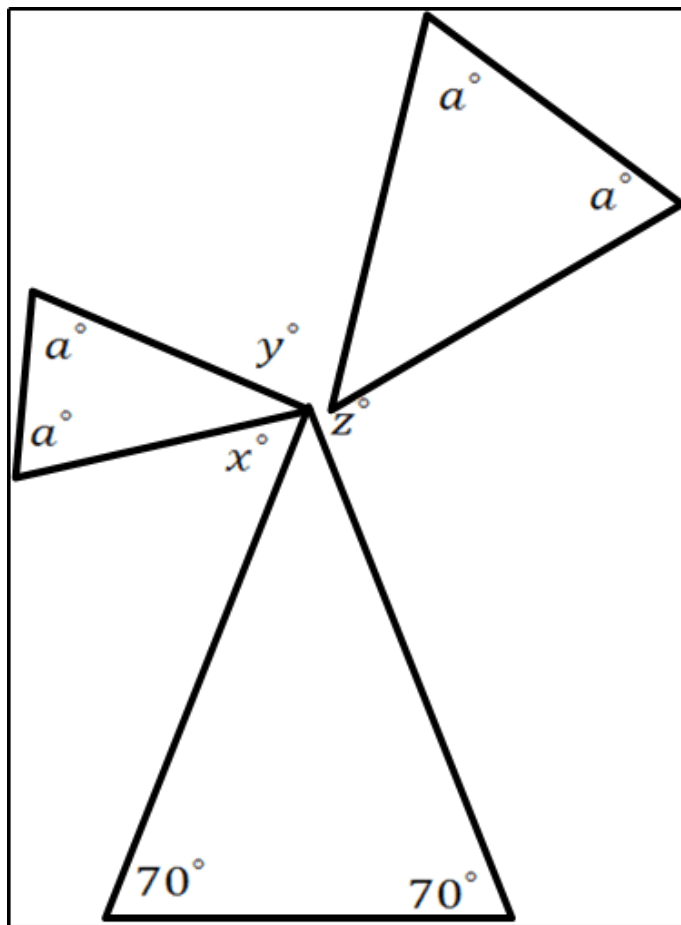


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- (A) One

- (B) Two
- (C) Three
- (D) Four
- (E) Five

**11.** In the figure above, the three triangles are similar. What is the value of  $x + y + z$  ?



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(A) 140

(B) 180

(C) 210

(D) 240

(E) 270

**12.** If the ideal length of an item is  $L$  centimeters and the actual length of the is  $A$  centimeters, then the error, in centimeters, is given by  $|A - L|$ . Which of the following could be them actual length, in centimeters, of a bolt with an ideal length of 8.1 centimeters and with an error of less than 0.01 centimeter?

(A) 8.105

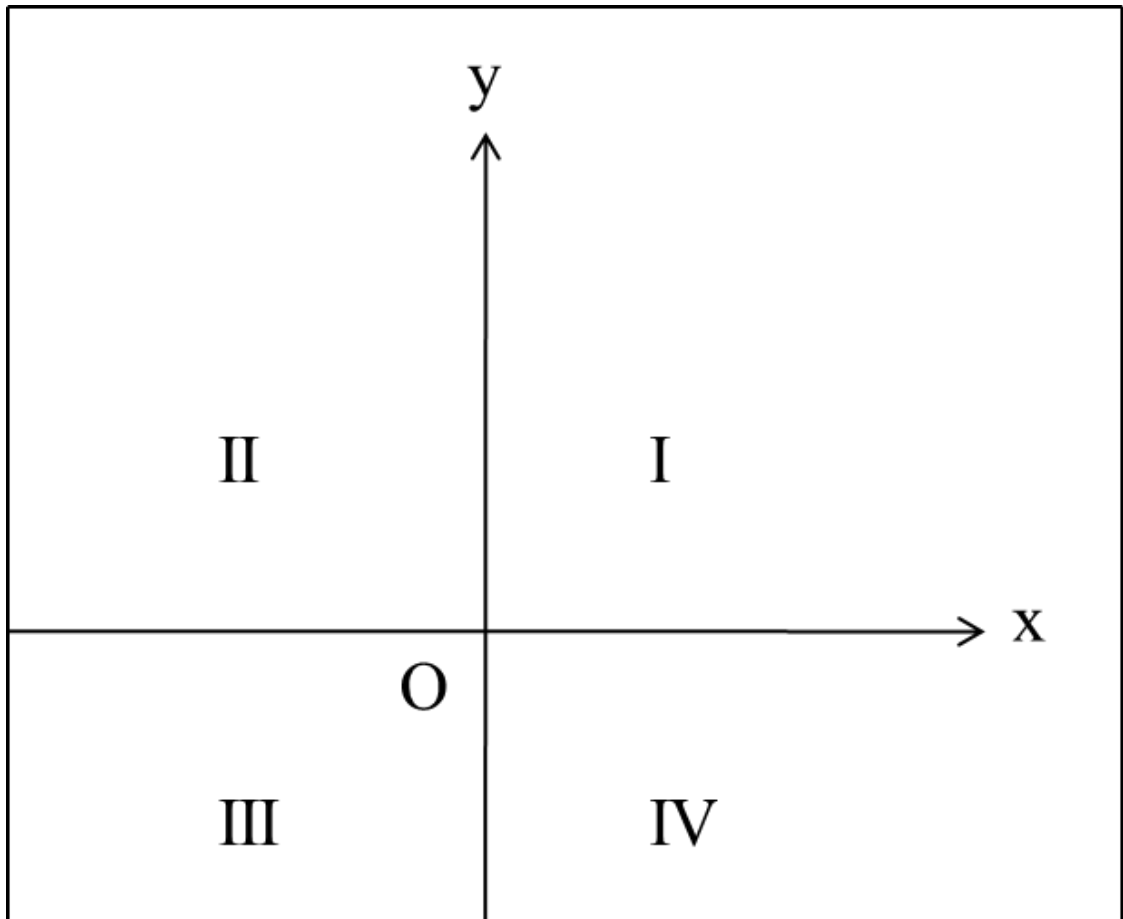
(B) 8.111

(C) 8.12

(D) 8.20

(E) 8.22

**13.** The  $x$  - and  $y$  -coordinates of point  $p$  are each to be chosen at random from the set of integers 1 through 10. What is the probability that  $p$  will be in quadrant II?





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(A) 0

(B)  $\frac{1}{100}$

(C)  $\frac{1}{10}$

(D)  $\frac{1}{4}$

(E)  $\frac{1}{2}$

**14.** A list consist of 14 consecutive positive integers. Which of the following could be the number of integers in the list that are divisible by 13?

I. None

II. One

III. Two

(A) I only

(B) II only

(C) I and II only

(D) II and III only

(E) I, II and III

**15.** For all  $x$ , let the function  $f$  be defined by  $f(x) = a(x - h^2) + k$ , where  $a$ ,  $h$ , and  $k$  are constants. If  $a$  and  $k$  are positive, which of the following CANNOT be true?

(A)  $f(10) = 1$

(B)  $f(0) = -5$

(C)  $f(0) = 5$

(D)  $f(1) = -h$

(E)  $f(-1) = h$

**16.** For any cube, if the volume is  $V$  cubic inches and the surface area is  $A$  square inches, then  $V$  is directly proportional to which of the following?

(A)  $A$

(B)  $A^2$



(C)  $A^3$

(D)  $A^{\frac{2}{3}}$

(E)  $A^{\frac{3}{2}}$

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