

**Examrace****SAT Questions and Answers Model Paper-6 Important Questions Section H**

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**Section - H****Time - 20 minutes****16 Questions**

1. A rope is 20 feet long. What is the maximum number of pieces, each 20 inches long that can be cut from the rope? (1 foot = 12 inches)

(A) 6

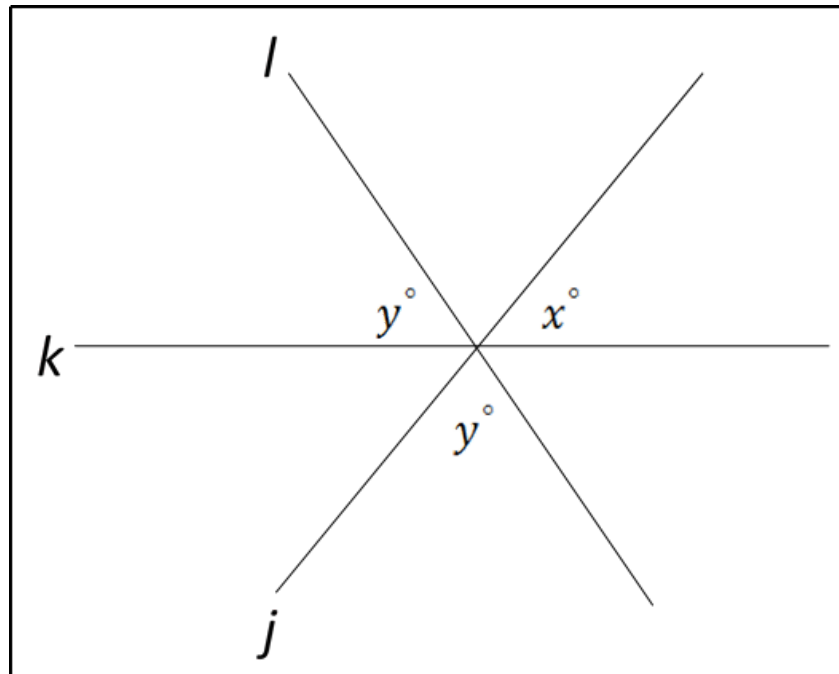
(B) 10

(C) 12

(D) 18

(E) 24

2. Lines  $j$ ,  $k$ , and  $l$  intersect at a point as shown below. If  $y = 70$ , what is the value of  $x$  ?



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Note: Figure not drawn to scale.

- (A) 20
- (B) 30
- (C) 40
- (D) 45
- (E) 55

**3.** The average (arithmetic mean) of the 3 numbers shown below is  $x$ . What is the value of  $x$  ?

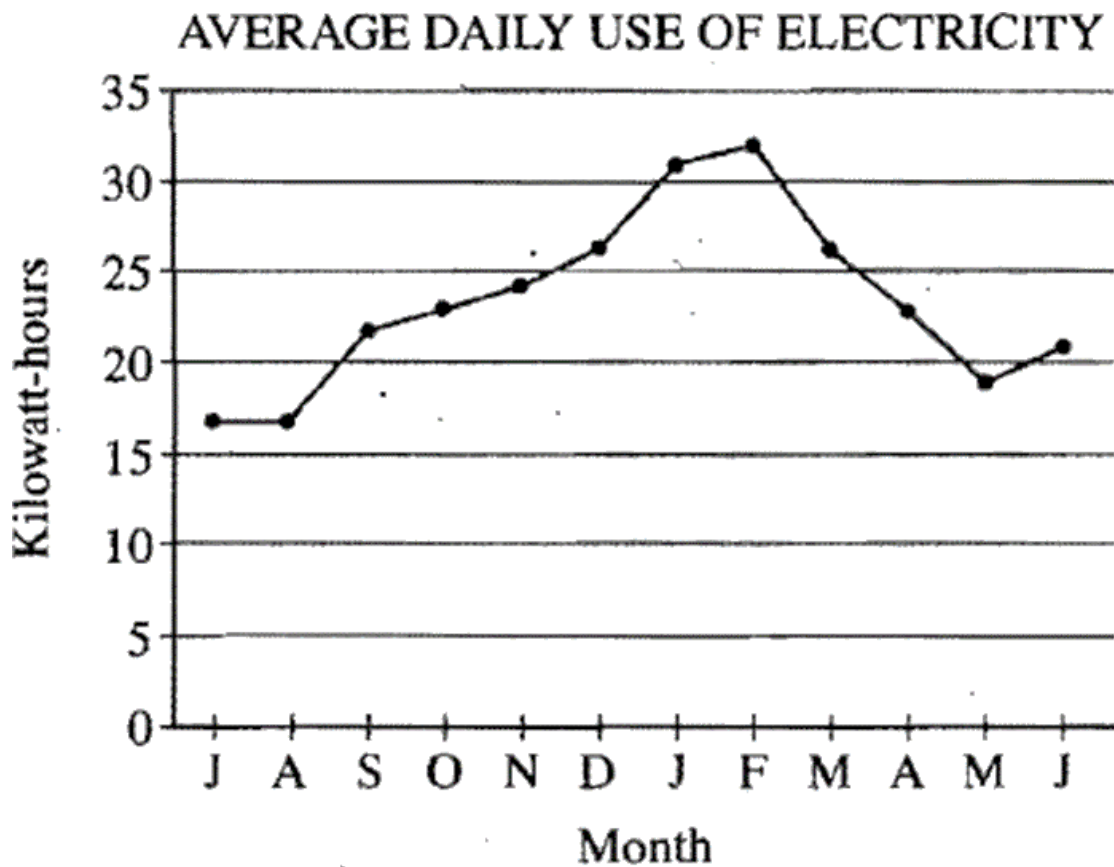
3, 9,  $x$

- (A) 3
- (B) 4
- (C) 5

(D) 6

(E) 9

4. The line graph below shows the average daily use of electricity, in kilowatt-hours, by a family for each month of a year, starting July. For how many months of the year was the family's average daily use of electricity less than 20 kilowatt-hours?



- (A) One
- (B) Two
- (C) Three
- (D) Five
- (E) Eight

5. Which of the following represents the statement, "x is 5 more than y"?

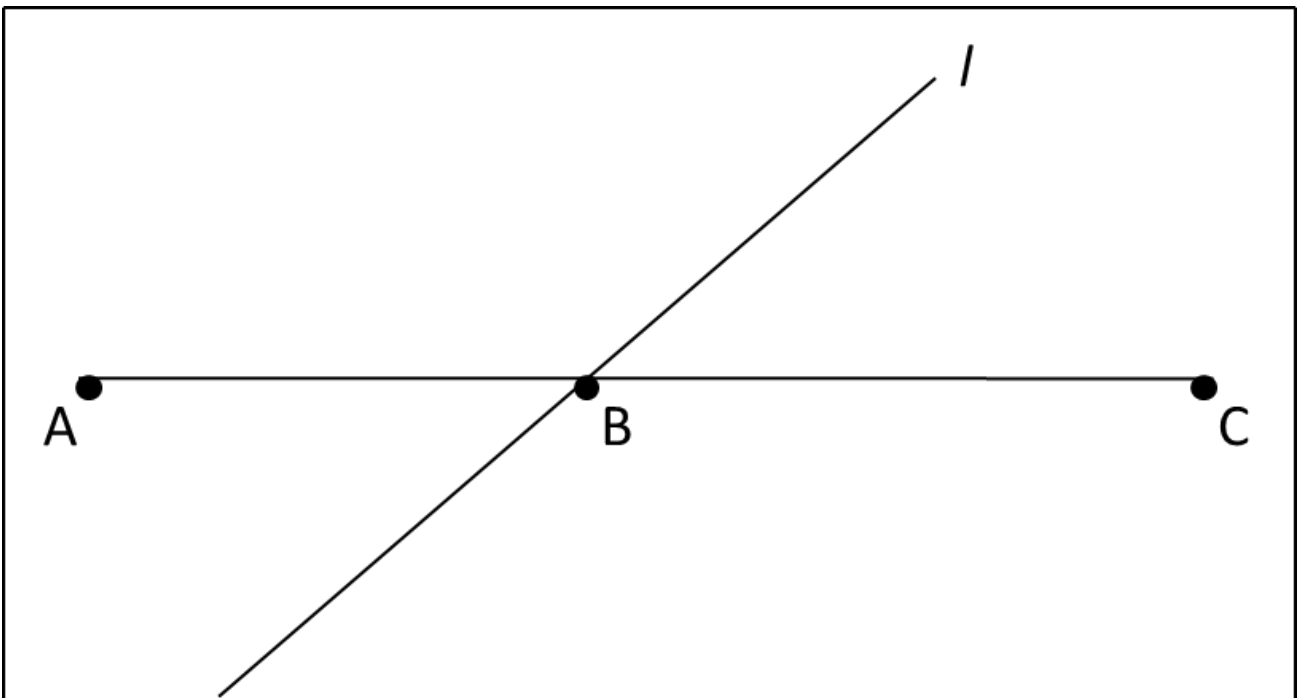
- (A)  $x = 5 + y$
- (B)  $x = 5y$
- (C)  $x + y = 5$
- (D)  $x + 5 > y$
- (E)  $x + y > 5$

6. At Middletown High school, 25 of the 150 juniors are members of the marching band. The fraction of the number of seniors who are members of the band is equal to the fraction of the number of juniors who are members of the band. How many of the 120 seniors are in the band?

- (A) 10
- (B) 15
- (C) 18
- (D) 20
- (E) 24

7. Line  $l$  intersects  $\overline{AC}$  at point  $B$  so that  $AB < BC$ . As shown below. If  $X$ ,  $Y$ , and  $Z$  (not shown) are the midpoints of  $\overline{AB}$ ,  $\overline{AC}$ , and  $\overline{BC}$ , respectively, which of the following must be true?

- I.  $A$  and  $X$  are on the same side of  $l$ .
- II.  $C$  and  $Y$  are on the same side of  $l$ .
- III.  $X$  and  $Z$  are on opposite sides of  $l$ .



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- (A) I only
- (B) II only
- (C) III only
- (D) I and III only
- (E) I, II, and III

**8.** George collected 90 tokens worth a total of 1,275 points. If each of the tokens has a value of either 15 points or 10 points, how many 15-point tokens did George collect?

- (A) 15
- (B) 17
- (C) 67
- (D) 73

(E) 75

9. The function  $f$  is defined by the table below. For what value of  $k$  does  $f(k) - k = 0$ ?

$k$	$f(k)$
-2	2
-1	-1
0	1
1	-2
2	0

*The Function  $F$  is Defined by the Table Below*

(A) -2

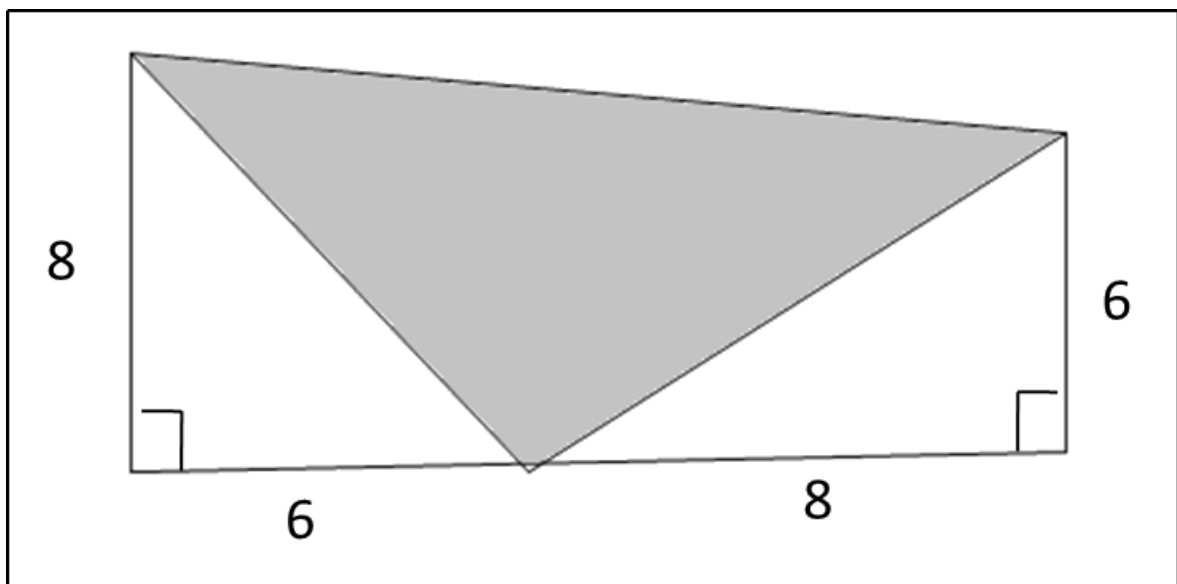
(B) -1

(C) 0

(D) 1

(E) 2

10. The figure below shows a trapezoid divided into three triangles. What is the area of the shaded triangle?



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- (A) 44
- (B) 46
- (C) 48
- (D) 50
- (E) 52

11. What is the smallest possible integer value of  $x$  for which  $(x - 8)(x + 5) < 0$ ?

- (A)  $-8$
- (B)  $-7$
- (C)  $-6$
- (D)  $-5$
- (E)  $-4$

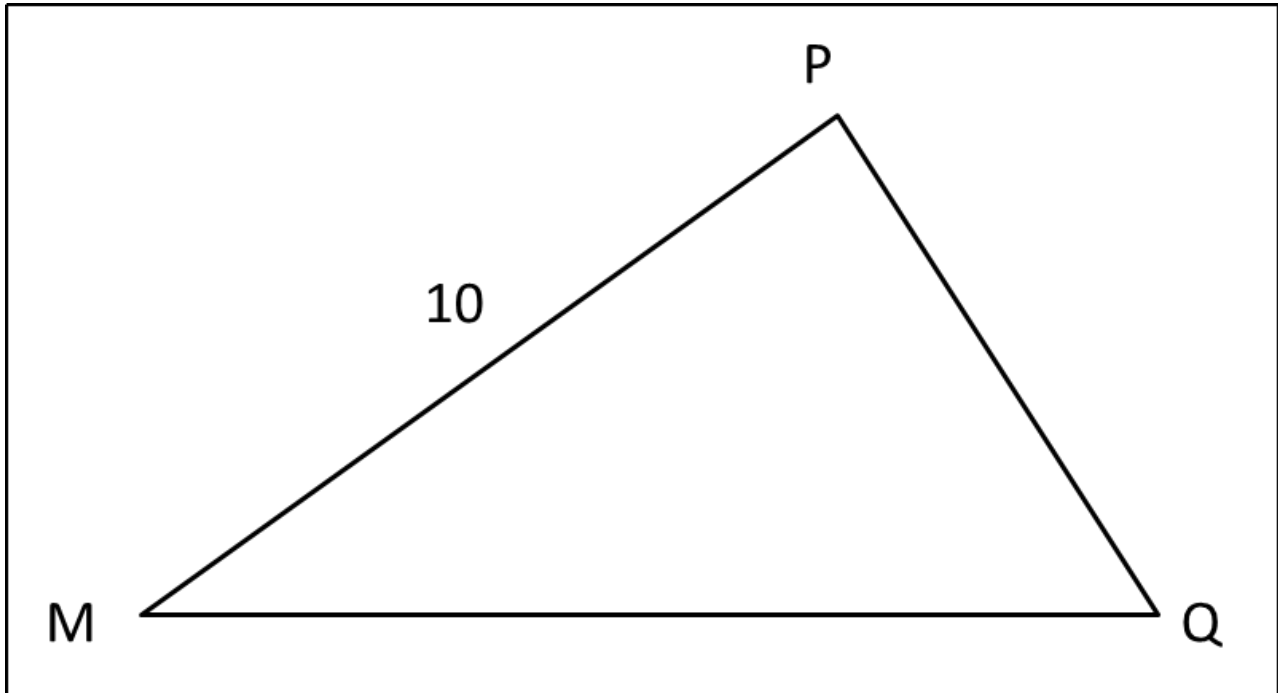
12. In the  $xy$ -plane, three of the vertices of a square are  $(0,0)$ ,  $(0,3)$ , and  $(3,0)$ . If the square is reflected about the line  $y = -x$ , which of the following is one vertex of the resulting square?

- (A)  $(-3, -3)$
- (B)  $(-3, 3)$
- (C)  $(0, 3)$
- (D)  $(3, -3)$
- (E)  $(3, 0)$

13. Of the 240 campers at a summer camp,  $\frac{5}{6}$  could swim. If  $\frac{1}{3}$  of the campers taking climbing lessons who could swim?

- (A) 20
- (B) 40
- (C) 80
- (D) 120
- (E) 200

14. In  $\triangle MPQ$  below, the measure of  $\angle M$  is  $30^\circ$  and the measure of  $\angle Q$  is  $45^\circ$ . What is the length of segment  $\overline{MQ}$ ?



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Note: Figure not drawn to scale.

- (A) 15
- (B) 20
- (C)  $5\sqrt{2}$
- (D)  $5\sqrt{3}$
- (E)  $5\sqrt{3} + 5$

**15.** If  $x^2 = y^3$  and  $y > 1$ , what does  $x^{\frac{2}{3}}$  equal in terms of  $y$ ?

- (A)  $y$
- (B)  $y^{\frac{3}{2}}$
- (C)  $y^2$
- (D)  $y^6$
- (E)  $y^9$

**16.** Based on the system of equations below, what is the value of  $z$ ?

$$z = x - y + 4$$

$$z = y - w - 3$$

$$z = w - x + 5$$

- (A) 2
- (B) 3
- (C) 4



(D) 6

(E) 12

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