

1. The pair of linear equations  $2x = 5y + 6$  and  $15y = 6x - 18$  represents two lines which are:
  - (a) intersecting
  - (b) parallel
  - (c) coincident
  - (d) either intersecting or parallel
  
2. In the given figure,  $TA$  is a tangent to the circle with center  $O$  such that  $OT = 4\text{cm}$ ,  $\angle OTA = 30^\circ$ , then the length of  $TA$  is:
  - (a)  $2 \times \sqrt{3}\text{cm}$
  - (b)  $2\text{cm}$
  - (c)  $2 \times \sqrt{2}\text{cm}$
  - (d)  $\sqrt{3}\text{cm}$
  
3. The ratio of HCF to LCM of the least composite number and the least prime number is:
  - (a)  $1 : 2$
  - (b)  $2 : 1$
  - (c)  $1 : 1$
  - (d)  $1 : 3$
  
4. If a pole 6 m high casts a shadow  $2 \times \sqrt{3}\text{m}$  long on the ground, then sun's elevation is:
  - (a)  $60^\circ$
  - (b)  $45^\circ$
  - (c)  $30^\circ$
  - (d)  $90^\circ$
  
5. In the given figure,  $\triangle ABC \sim \triangle QPR$ , If  $AC = 6\text{cm}$ ,  $BC = 5\text{cm}$ ,  $QR = 3\text{cm}$  and  $PR = x$ ; then the value of  $x$  is:
  - (a)  $3.6\text{cm}$

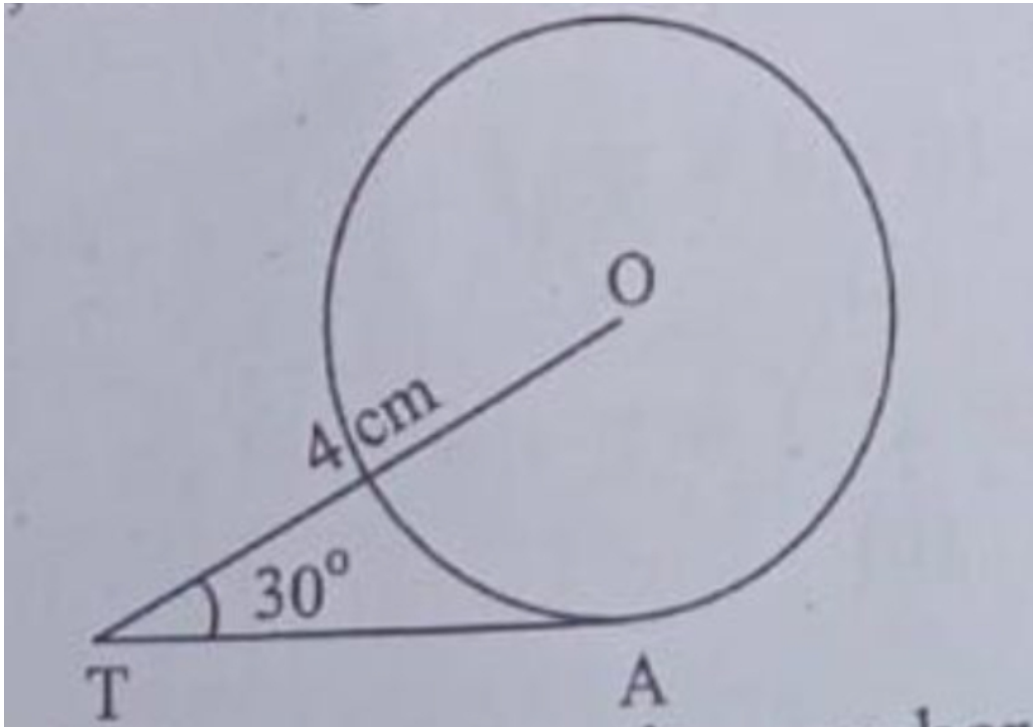


Figure 1: image1

- (b) 2.5cm
- (c) 10cm
- (d) 3.2cm

6. The distance of the point  $(-6, 8)$  from origin is:

- (a) 6
- (b) -6
- (c) 8
- (d) 10

7. The next term of the A.P.:  $\sqrt{70}, \sqrt{28}, \sqrt{63}$  is:

- (a)  $\sqrt{70}$

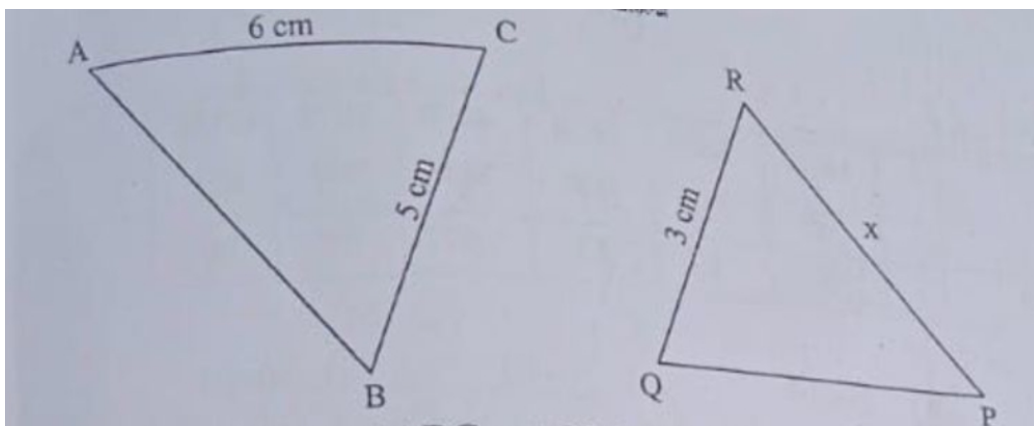


Figure 2: image2

- (b)  $\sqrt{80}$
  - (c)  $\sqrt{97}$
  - (d)  $\sqrt{112}$
8.  $(\sec^2 \theta - 1)(\operatorname{cosec}^2 \theta - 1)$  is equal to:
- (a)  $-1$
  - (b)  $1$
  - (c)  $0$
  - (d)  $2$
9. Two dice are thrown together. The probability of getting the difference of numbers on their upper faces equal to 3 is:
- (a)  $\frac{1}{9}$
  - (b)  $\frac{2}{9}$
  - (c)  $\frac{1}{6}$
  - (d)  $\frac{1}{12}$
10. A Card is drawn at random from a well-shuffled pack of 52 cards. The probability that the card drawn is not an ace is:

- (a)  $\frac{1}{13}$
- (b)  $\frac{9}{13}$
- (c)  $\frac{4}{13}$
- (d)  $\frac{12}{13}$

11. The roots of the equation  $x^2 + 3x - 10 = 0$  are:

- (a)  $2, -5$
- (b)  $-2, 5$
- (c)  $2, 5$
- (d)  $-2, -5$

12. If  $\alpha, \beta$  are zeroes of the polynomial  $x^2 - 1$ , then the value of  $(\alpha + \beta)$  is:

- (a)  $2$
- (b)  $1$
- (c)  $-1$
- (d)  $0$

13. If  $\alpha, \beta$  are the zeroes of the polynomial  $p(x) = 4x^2 - 3x - 7$ , then  $\frac{1}{\alpha} + \frac{1}{\beta}$  is equal to:

- (a)  $\frac{7}{3}$
- (b)  $-\frac{7}{3}$
- (c)  $\frac{3}{7}$
- (d)  $-\frac{3}{7}$

14. What is the area of a semi-circle of diameter ( $d$ )?

- (a)  $\frac{1}{16} \times \pi \times d^2$
- (b)  $\frac{1}{4} \times \pi \times d^2$
- (c)  $\frac{1}{8} \times \pi \times d^2$
- (d)  $\frac{1}{2} \times \pi \times d^2$

15. For the following distribution:

Marks Below	10	20	30	40	50	60
Number of Students	3	12	27	57	75	80

The modal class is:

- (a) 10 – 20
- (b) 20 – 30
- (c) 30 – 40
- (d) 50 – 60

16. In the given figure,  $PT$  is a tangent at  $T$  to the circle with centre ( $O$ ). If  $\angle TPO = 25^\circ$ , then  $x$  is equal to:

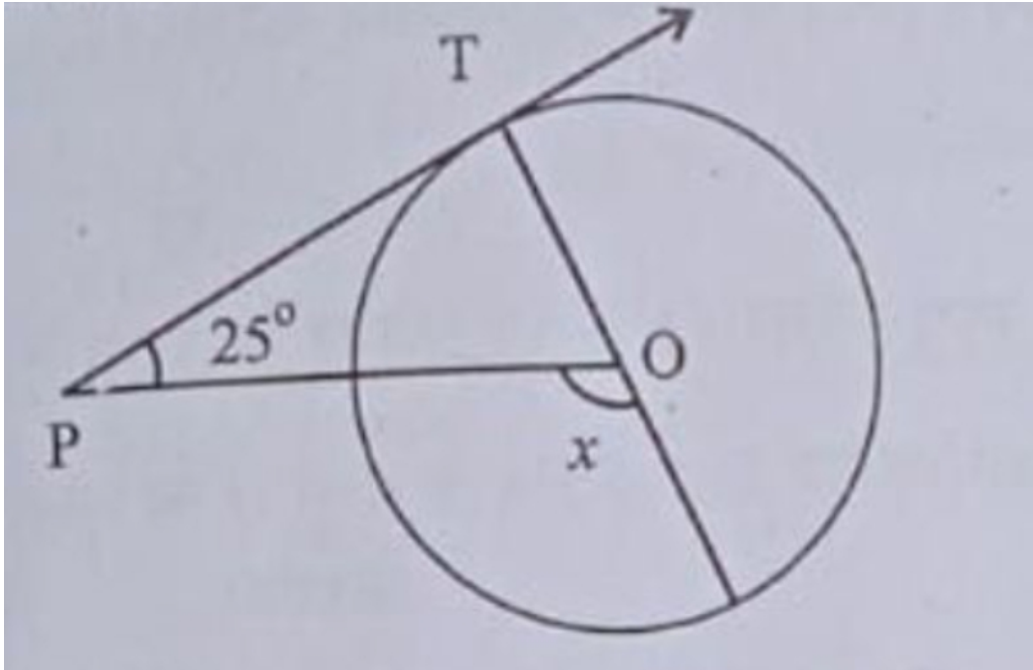


Figure 3: image3

- (a)  $25^\circ$
- (b)  $65^\circ$
- (c)  $90^\circ$
- (d)  $115^\circ$

17. In the given figure,  $PQ \parallel AC$ . If  $BP = 4$  cm,  $AP = 2.4$  cm, and  $BQ = 5$  cm, then the length of  $BC$  is:

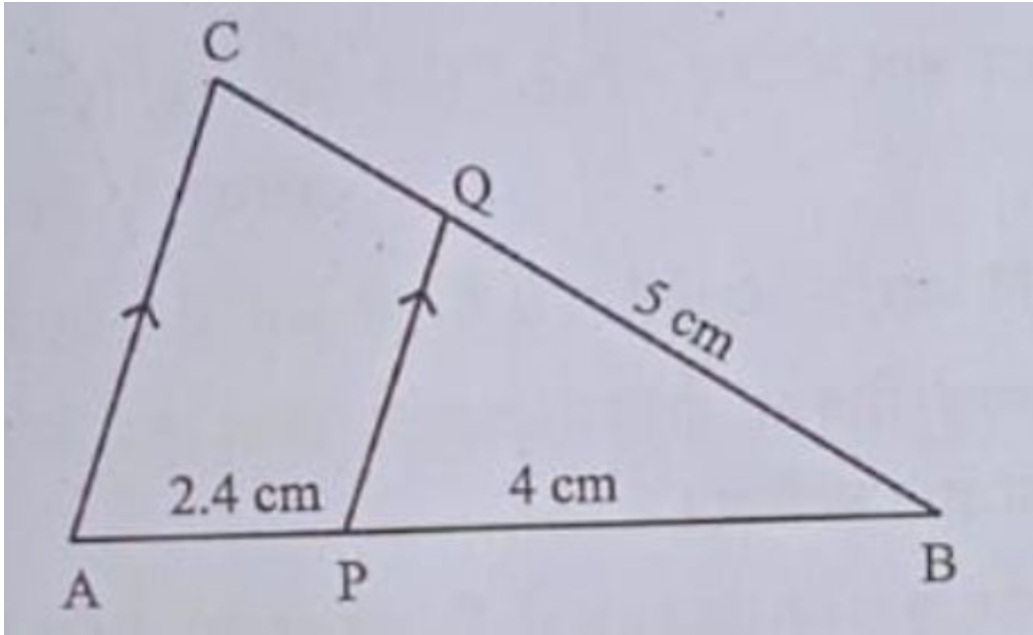


Figure 4: image4

- (a) 8cm
  - (b) 3cm
  - (c) 0.3cm
  - (d)  $\frac{25}{3}$ cm
18. The points  $(-4, 0)$ ,  $(4, 0)$ , and  $(0, 3)$  are the vertices of a:
- (a) right triangle
  - (b) isosceles triangle
  - (c) equilateral triangle
  - (d) scalene triangle

19. DIRECTIONS: In questions number 19 and 20, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option out of the following: Assertion (A): The probability that a leap year has 53 Sundays is  $\frac{2}{7}$ .

Reason (R): The probability that a non-leap year has 53 Sundays is  $\frac{5}{7}$ .

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
- (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A).
- (c) Assertion (A) is true but Reason (R) is false.
- (d) Assertion (A) is false but Reason (R) is true.