

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) 2cm
 - (c) $2 \times \sqrt{2}\text{cm}$
 - (d) $\sqrt{3}\text{cm}$

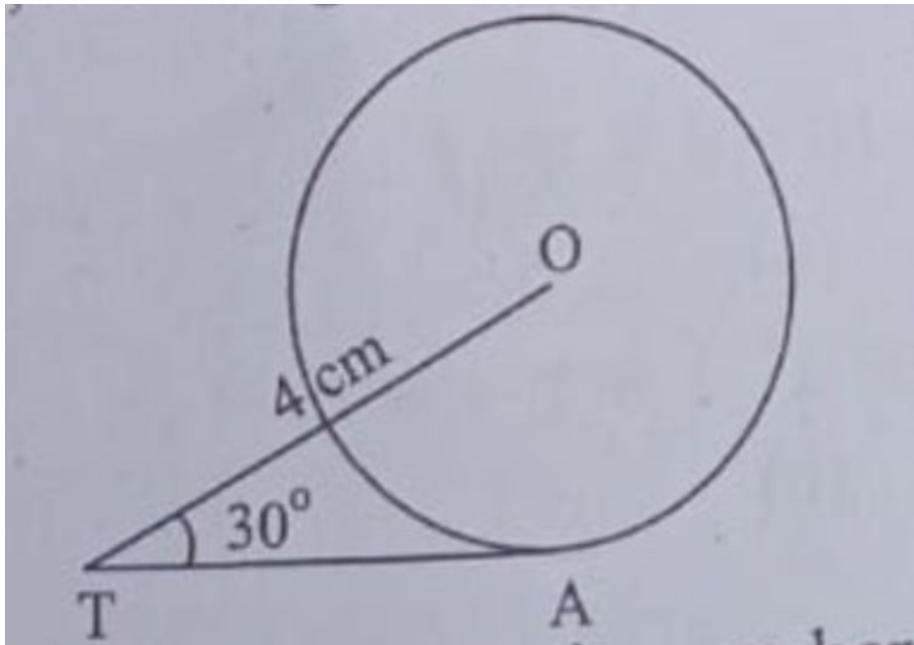


Figure 1: image1

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 $2 \times \sqrt{3}$ m long on the ground, then sun's elevation is:
(a) 60°
(b) 45°
(c) 30°
(d) 90°
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 cm
(b) 2.5 cm
(c) 10 cm
(d) 3.2 cm

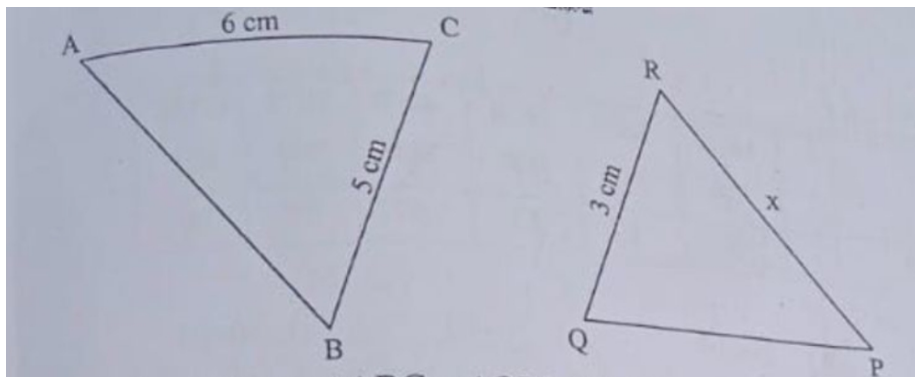


Figure 2: image2

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) $\sqrt{70}$
 - (b) $\sqrt{80}$
 - (c) $\sqrt{97}$
 - (d) $\sqrt{112}$
8. $(\sec^2 \theta - 1)(\csc^2 \theta - 1)$ 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 α, β 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 α, β 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:

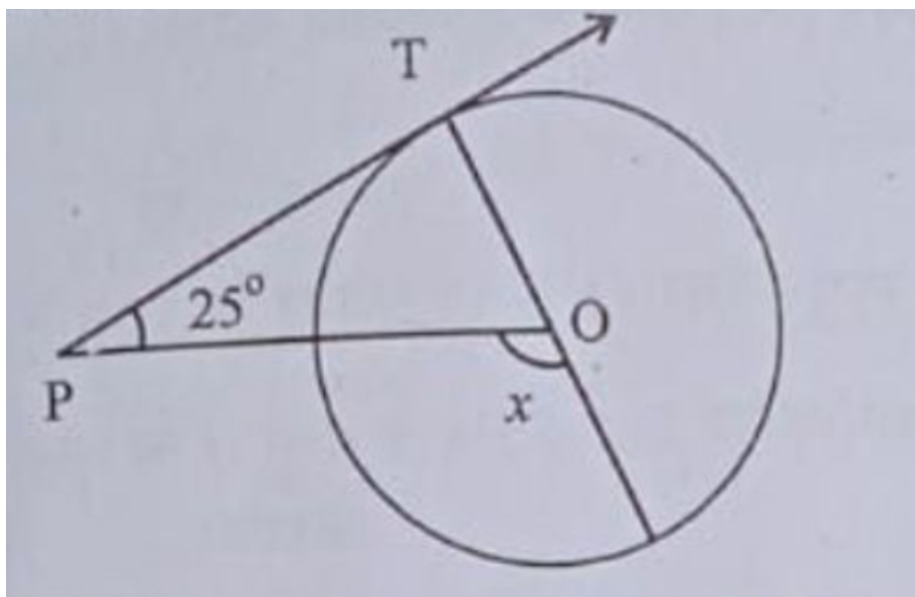


Figure 3: image3

- (a) 25°
- (b) 65°
- (c) 90°
- (d) 115°

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:

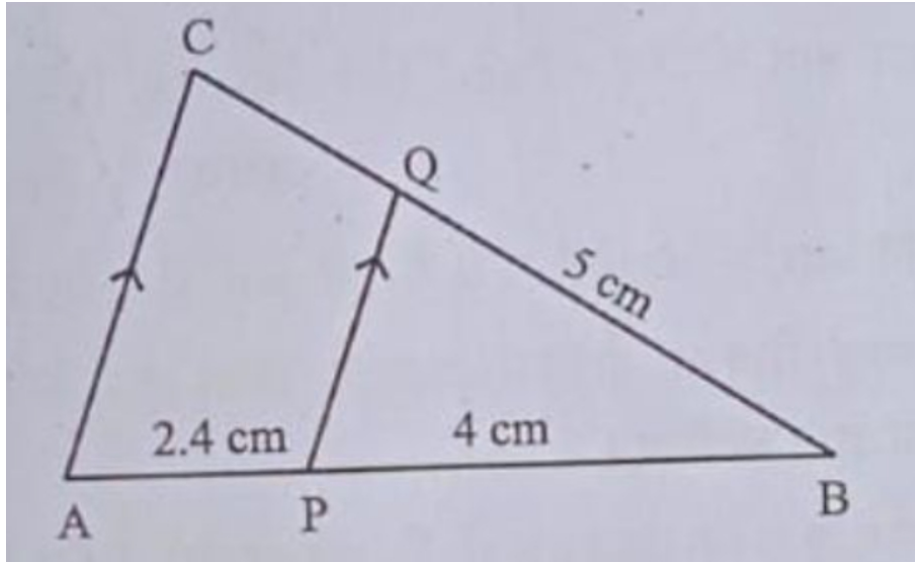


Figure 4: image4

- (a) 8 cm
 - (b) 3 cm
 - (c) 0.3 cm
 - (d) $\frac{25}{3}\text{ cm}$
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.