

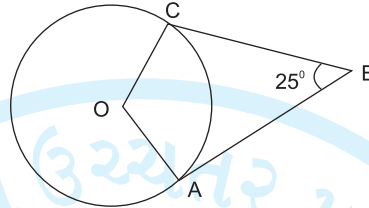


SECTION - A

- Select the proper alternative from the given to make the statement true. (1 mark each) [5]

Q. 1 In the given figure $\angle ABC = 25^\circ$ then $\angle AOC = \dots\dots\dots$

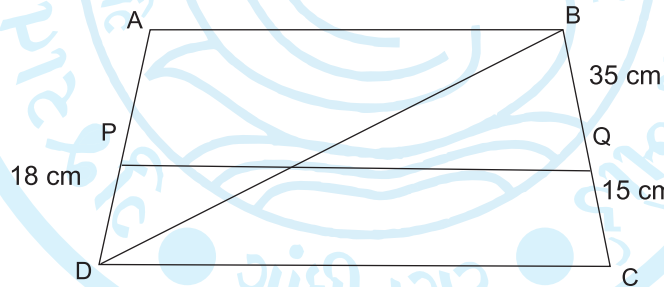
- (A) 135°
- (B) 145°
- (C) 165°
- (D) 155°



Q. 2 Which of the following Quadratic equations do not have real roots ?

- (A) $x^2 - 4x + 3\sqrt{2} = 0$
- (B) $x^2 + 4x - 3\sqrt{2} = 0$
- (C) $x^2 - 4x - 3\sqrt{2} = 0$
- (D) $3x^2 + 4\sqrt{3}x + 4 = 0$

Q. 3 ABCD is a trapezium in which $AB \parallel CD$ and P, Q are points on AD and BC respectively such that $PQ \parallel DC$. If $PD = 18$ cm, $BQ = 35$ cm and $QC = 15$ cm, find AD (See figure)



- (A) 55 cm
- (B) 57 cm
- (C) 60 cm
- (D) 62 cm

Q. 4 ABC and BDE are two equilateral triangles such that D is the mid-point of BC. Ratio of areas of triangles ABC and BDE is

- (A) 2 : 1
- (B) 1 : 2
- (C) 4 : 1
- (D) 1 : 4

Q. 5 Which of the following quadratic equations have $x = 3$ as one of its roots.

- (A) $x^2 - 8x + 15 = 0$
- (B) $x^2 + 8x + 15 = 0$
- (C) $x^2 - 8x - 15 = 0$
- (D) $x^2 + 8x - 15 = 0$

SECTION - B

- Answer the following. (2 marks each) [10]

Q. 6 Two concentric circles are of the radii 5 cm and 3 cm. Find the length of the chord of the larger circle which touches the smaller circle.



ગુજરાત માધ્યમિક અને ઉચ્ચતર માધ્યમિક શિક્ષણ બોર્ડ, ગાંધીનગર

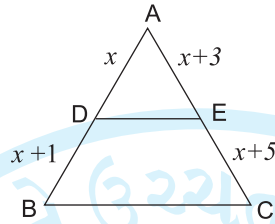
Q. 7 Find the roots of the following equation by Factorisation.

$$\frac{x+1}{x-1} - \frac{x-1}{x+1} = \frac{5}{6}; x \neq 1, -1$$

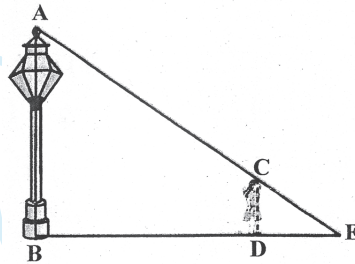
Que. 8 Find the value of k for the following quadratic equation so that it has two real and equal roots.

$$5x^2 - 2kx + 20 = 0$$

Que. 9 In $\triangle ABC$, $DE \parallel BC$. Find X



Q. 10 A girl of height 90 cm is walking away from the base of a lamp-post at a speed of 1.2 m/s. If the lamp is 3.6 m above the ground, find the length of her shadow after 4 seconds.



SECTION - C

● Answer the following in brief. (3 marks each)

[06]

Q. 11 A 5 m long ladder is placed leaning towards a vertical wall such that it reaches the wall at point 4 m high. If the foot of the ladder is moved 1.6 towards the wall, then find the distance by which the top of the ladder would slide upwards on the wall.

Q. 12 Yashvi rides a bicycle at a uniform speed. If the speed had been 4 km/hr more, it would have taken 1 hour less to travel 48 km distance. Determine her speed.

SECTION - D

● Answer the following.

[04]

Q. 13 In the given figure OB is perpendicular bisector of the line segment DE, $FA \perp OB$ and FE intersects OB at the point C. Prove that

$$\frac{1}{OA} + \frac{1}{OB} = \frac{2}{OC}$$

