



CREST Mathematics Olympiad (CMO) Worksheet *for* Class 6



Topic

Understanding Elementary Shape



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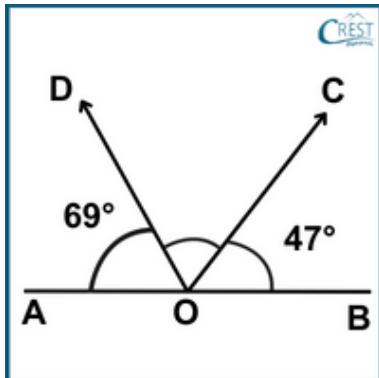
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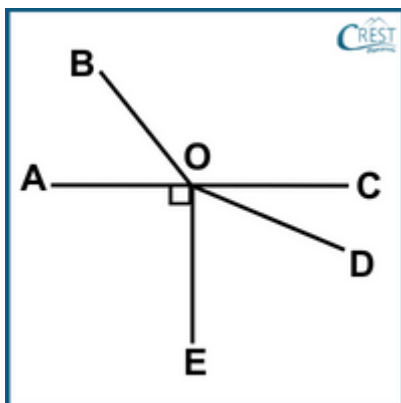
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Worksheet on Understanding Elementary Shape

1. In the given figure, AOB is a straight line. If $\angle AOD = 69^\circ$ and $\angle BOC = 47^\circ$, what is the value of $\angle COD$?

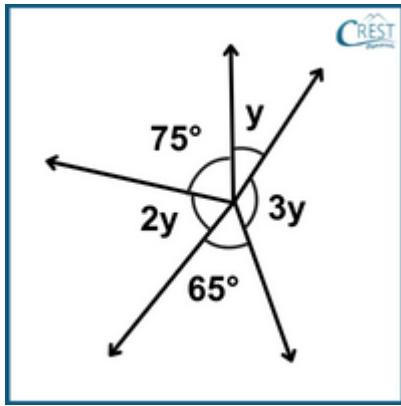


- a. 44°
b. 54°
c. 64°
d. 74°
2. The sum of all the interior angles of a polygon is 2340° . How many sides does the polygon have?
- a. 9
b. 11
c. 13
d. 15
3. In the given figure, AOC is a straight line. If $\angle AOE = 90^\circ$, $\angle AOB = 52^\circ$ and $\angle COD = 27^\circ$. What is the measure of $\angle EOD$?



- a. 33°
b. 43°
c. 53°
d. 63°

4. What is the value of $1.5y$?



- a. 35°
- b. 55°
- c. $55^\circ/3$
- d. $110^\circ/3$

5. For an angle z° , What is the value of $z^\circ/2$ if its supplement is three times its complement?

- a. $15\frac{1}{2}^\circ$
- b. $22\frac{1}{2}^\circ$
- c. $37\frac{1}{2}^\circ$
- d. 45°

Answer Key

1. c - 64°

Explanation: $\angle AOD + \angle COD + \angle BOC = 180^\circ$ [Supplementary angles]
 $\Rightarrow 69^\circ + \angle COD + 47^\circ = 180^\circ$
 $\Rightarrow \angle COD + 116^\circ = 180^\circ$
 $\Rightarrow \angle COD = 180^\circ - 116^\circ$
 $\Rightarrow \angle COD = 64^\circ$

2. d - 15

Explanation: Sum of interior angles in a polygon = 2340°
 $\Rightarrow (n - 2) \times 180^\circ = 2340^\circ$
 $\Rightarrow (n - 2) = 2340^\circ/180^\circ$
 $\Rightarrow n - 2 = 13$
 $\Rightarrow n = 13 + 2$
 $\Rightarrow n = 15$

3. d - 63°

Explanation: $\angle AOE + \angle COE = 180^\circ$ [AOC is a straight line, Linear Pair]

$$\Rightarrow 90^\circ + \angle COE = 180^\circ$$

$$\Rightarrow \angle COE = 180^\circ - 90^\circ$$

$$\Rightarrow \angle COE = 90^\circ$$

$\angle EOD + \angle COD = \angle COE$ (Complementary Angles)

$$\Rightarrow \angle EOD + 27^\circ = 90^\circ$$

$$\Rightarrow \angle EOD = 90^\circ - 27^\circ$$

$$\Rightarrow \angle EOD = 63^\circ$$

4. b - 55°

Explanation: Figure shows the complete angle which is 360° .

$$\Rightarrow y + 75^\circ + 2y + 65^\circ + 3y = 360^\circ$$

$$\Rightarrow 6y + 140^\circ = 360^\circ$$

$$\Rightarrow 6y = 360^\circ - 140^\circ$$

$$\Rightarrow 6y = 220^\circ$$

$$\Rightarrow y = 220^\circ/6$$

$$\Rightarrow y = 110^\circ/3$$

The value of $1.5y$ is:

$$\Rightarrow 1.5y = 1.5 \times 110^\circ/3 = 55^\circ$$

5. b - $22\frac{1}{2}^\circ$

Explanation: Supplement of an angle z° is three times its complement.

$$\Rightarrow \text{Supplement of an angle } z^\circ = 3 \times \text{Complement of an angle } z^\circ$$

$$\Rightarrow 180^\circ - z^\circ = 3 \times (90^\circ - z^\circ)$$

$$\Rightarrow 180^\circ - z^\circ = 270^\circ - 3z^\circ$$

$$\Rightarrow 3z^\circ - z^\circ = 270^\circ - 180^\circ$$

$$\Rightarrow 2z^\circ = 90^\circ$$

$$\Rightarrow z^\circ = 90^\circ/2$$

$$\Rightarrow z^\circ = 45^\circ$$

$$\text{The value of } z^\circ/2 = 45^\circ/2 = 22\frac{1}{2}^\circ$$

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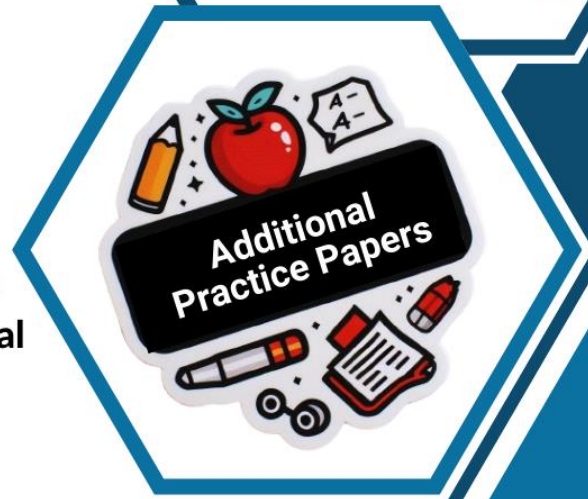
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