

7. LINE AND ANGLES ^①

Class: VI . MATHEMATICS

FOUNDATION. SOLUTIONS

(2025/26)

TEACHING TASK JEE MAINS LEVEL

01 $n=5$
No. of line segments = $\frac{n(n-1)}{2}$
 $= \frac{5 \times 4}{2} = 10$

Ans: A

02 $V + F = 2 + E$
 $8 + 6 = 2 + E \Rightarrow E = 12$

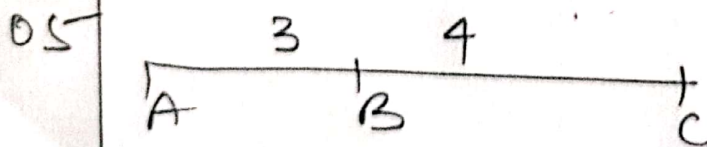
Ans: A

03 $4(4.5) - 2(6) = 18 - 12 = 6$

Ans: D

04 $AB = 42 \times \frac{3}{2} = 63 \text{ cm}$
 $BC = 42 \times \frac{2}{7} = 12 \text{ cm}$ } $AB > BC$

Ans: C



$$AB:BC = 3:4$$

$$\text{Given } BC = 24 \text{ cm}$$

$$\begin{aligned} \text{i.e. } 4 \text{ parts} &= 24 \text{ cm} \\ 1 \text{ part} &= 6 \text{ cm} \end{aligned}$$

$$\therefore AB = 3 \times 6 = 18 \text{ cm}$$

$$\begin{aligned} AC &= AB + BC \\ &= 18 + 24 \\ &= 42 \text{ cm} \end{aligned}$$

Ans: D

06 $2(4.9) - 4 = 9.8 - 4 = 5.8 \text{ cm}$ Ans: A②

07 $\alpha + \beta = 90^\circ, \alpha : \beta = 7 : 8$

$$\alpha = \frac{7}{15} \times 90^\circ = 42^\circ$$

$$\therefore \beta = 90^\circ - 42^\circ = 48^\circ$$

Ans: C

08 $\alpha + \beta = 180^\circ, \alpha : \beta = 4 : 5$

$$\alpha = \frac{4}{9} \times 180^\circ = 80^\circ$$

$$\beta = 180^\circ - 80^\circ = 100^\circ$$

Ans: C

09 $x^\circ + (2x - 21^\circ) = 180^\circ$

$$\Rightarrow x = 67^\circ$$

Ans: B

10 $x = 35^\circ, y = 4 \times 35^\circ = 140^\circ, z = 3 \times 35^\circ = 105^\circ$

$$\therefore x + y + z = 35^\circ + 140^\circ + 105^\circ = 280^\circ$$

Ans: D

JEE ADVANCED LEVEL

01. $\angle ABC = \frac{360^\circ}{6} = 60^\circ, \angle PQR = \frac{360}{4} = 90^\circ$ Ans: B, D

02 Conceptual

Ans: A, C

03 Statement I: let x be the required angle

$$x + 30^\circ = 2(180^\circ - x) \Rightarrow x = 110^\circ$$

(True)

Statement II: Conceptual (True)

Ans: A

04 Statement I: $n=4$
 No. of line segments = $\frac{n(n-1)}{2} = \frac{4 \times 3}{2} = 6$ (False)
 Statement II: Conceptual (True) (3) Ans. D

05 Assertion: Conceptual (True)
 Reason: Conceptual (True) Ans. A

06 Assertion: Conceptual (True)
 Reason: Conceptual (True) Ans. A

07. Conceptual Ans. B

08 Conceptual Ans. C

09 $\angle BCD = 30^\circ + 40^\circ = 70^\circ$ Ans. C

10 180° Ans. D

11 $3x + 40^\circ + x - 20^\circ = 180^\circ$
 $\Rightarrow x = 40^\circ$ Ans. 40°

12 98 m Ans. 98

13 a) Conceptual (r)
 b) Conceptual (q)
 c) Conceptual (p)
 d) Conceptual (s) Ans. r, q, p, s

14 a) $89^\circ, 70^\circ$ (sit) c) 181° (q)
 b) ~~181°~~ ~~(q)~~ 91° (p) d) 90° (r)
Ans. (sit), p, q, r

LEARNERS TASK (CUES)

④

- | | | |
|-----|--|--------|
| 01. | Conceptual | Ans: A |
| 02. | Conceptual | Ans: C |
| 03. | Conceptual | Ans: A |
| 04. | No. of Vertices = $n = 5$
No. of line segments = $\frac{n(n-1)}{2} = \frac{5 \times 4}{2} = 10$ | Ans: C |
| 05. | Conceptual | Ans: A |
| 06. | Conceptual | Ans: B |
| 07. | Conceptual | Ans: A |
| 08. | Conceptual | Ans: D |
| 09. | $90^\circ - 2^\circ = 88^\circ$ | Ans: B |
| 10. | $180^\circ - 178^\circ = 2^\circ$ | Ans: B |

JEE MAINS LEVEL

- | | | |
|-----|--|---|
| 01. | $LA + LB = 180^\circ$
$LA + 130^\circ = 180^\circ$ | $\Rightarrow LA = 50^\circ$

Ans: C |
| 02. | $CD = 2x + 5 = 13 \Rightarrow x = 4$
$AB = 2x + 20 = 28$
$AB = 4 + 10 = 14$
$CD = 13$ | $AB + CD + DA$
$= 14 + 13 + 28$
$= 55^\circ$
<div style="border: 1px solid red; padding: 2px; display: inline-block;">Ans: -</div> |

$$03 \quad 3(6) - 4.5 = 18 - 4.5 = 13.5 \text{ cm}$$

Ans: D
(5)

$$04 \quad 90^\circ - 41^\circ = 49^\circ$$

Ans: C

$$05 \quad A) 23^\circ + 67^\circ = 90^\circ$$

Ans: A

$$06 \quad 180^\circ, 279^\circ$$

Ans: C

$$07 \quad LA = 72 \times \frac{5}{4} = 90^\circ$$

$$\text{Now, } \frac{2}{3}(90^\circ) + 132^\circ = 192^\circ$$

$$\text{Now, } 360^\circ - 192^\circ = 168^\circ$$

Ans: D

$$08 \quad C) 50^\circ, 40^\circ$$

Ans: C

$$09 \quad a = 90^\circ - 25^\circ = 65^\circ ; b = 90^\circ - 65^\circ = 25^\circ$$

$$a + b = 90^\circ$$

Ans: A

$$10 \quad x + 10^\circ + x + 40^\circ = 90^\circ$$

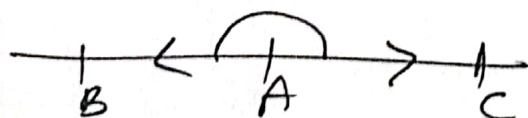
$$\Rightarrow x = 20^\circ$$

$$\therefore 20^\circ + 10^\circ = 30^\circ, \quad 20^\circ + 40^\circ = 60^\circ$$

Ans: D

JEE ADVANCED LEVEL

01.



$$\therefore 5x - 30^\circ + 2x = 180^\circ$$

$$\Rightarrow x = 30^\circ \text{ or } 2 \times 15^\circ$$

Ans: A, C

02	Conceptual	Ans: A (6)
03	<u>Statement I:</u> $x = 70^\circ - 20^\circ = 50^\circ$ $y = 180^\circ - 30^\circ = 150^\circ$ $z = 135^\circ + 25^\circ = 160^\circ$ $\therefore x + y + z = 365^\circ$ (True)	<u>Statement II:</u> Conceptual (True) Ans: A
04	<u>Statement I:</u> Conceptual (True) <u>Statement II:</u> Conceptual (False)	Ans: C
05	<u>Assertion:</u> Conceptual (True) <u>Reason:</u> Conceptual (True)	Ans: A
06	<u>Assertion:</u> Conceptual (False) <u>Reason:</u> Conceptual (True)	Ans: D
07	Conceptual	Ans: C
08	Conceptual	Ans: D
09	$AB = 19.6 \times \frac{7}{4} = 34.3 \text{ cm}$ $BC = 37.9 - 12.4 = 25.5 \text{ cm}$ $CD = 30.1 + 4.6 = 34.7 \text{ cm}$ $DE = 2.7 \times 8 = 21.6$ 34 $AB + BC + CD - x = DE$ $\Rightarrow 34.3 + 25.5 + 34.7 - x = 21.6$ $\Rightarrow 94.5 - x = 21.6$ $\Rightarrow x = 94.5 - 21.6 = 72.9 \text{ cm}$	
		Ans: A



10
$$\frac{34.3 \times 25.5}{34.7 \times 21.6} = \frac{874.65}{749.52} = 1.16 \text{ (approx)} \textcircled{7}$$

 Ans: D

11
$$\begin{array}{c} 3 \quad 3 \\ | \quad | \\ A \quad B \quad C \end{array} \Rightarrow AC = 60m$$

 Ans: 6

12 15 mt
 Ans: 15

- 13
- a) Conceptual (r)
 - b) Conceptual (s)
 - c) Conceptual (p)
 - d) Conceptual (q)
- Ans: r, s, p, q

- 14
- a) Conceptual (r)
 - b) Conceptual (p)
 - c) Conceptual (q)
 - d) Conceptual (s)
- Ans: r, p, q, s

$\Rightarrow$ THE END $\Leftarrow$