

# INTEGRATED <sup>+</sup> ①

Class: IX, MATHEMATICS

## 2. QUADRILATERALS

### TEACHING TASK (JEE MAINS)

01. Area =  $\frac{1}{2} \times 8 \times 6 = 24 \text{ cm}^2$

Ans: A

02. Area =  $\frac{1}{2} h(a+b) = \frac{1}{2} \times 4 \times (10+6)$   
 $= 32 \text{ cm}^2$

Ans: B

03. Conceptual

Ans: B

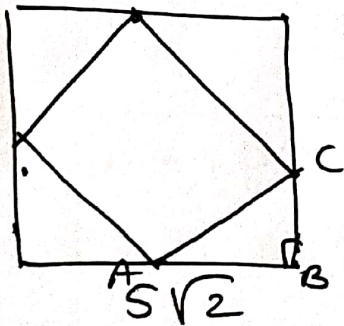
04. Square, Rhombus, Kite

Ans: A

05. Median

Ans: B

06



Here  $AB = BC = \frac{5\sqrt{2}}{2}$

$$\begin{aligned} AC^2 &= AB^2 + BC^2 \\ &= \left(\frac{5\sqrt{2}}{2}\right)^2 + \left(\frac{5\sqrt{2}}{2}\right)^2 \\ &= 25 \end{aligned}$$

$\therefore AC = 5$

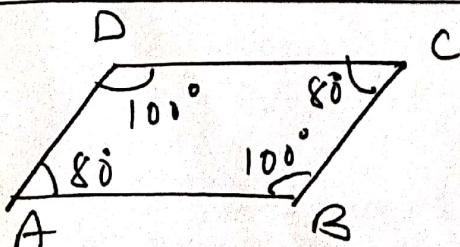
Ans: B

07.  $x^\circ + x^\circ + x^\circ + 120^\circ = 360^\circ$

$\Rightarrow x = 80^\circ$

Ans: A

08



Ans: A

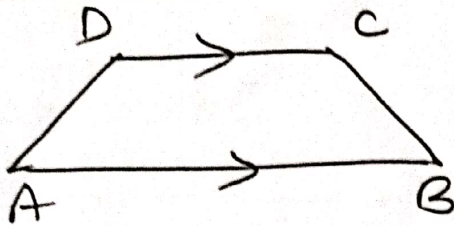


09.

$$\angle C + \angle D = 180^\circ$$

Ans: B (2)

10



$$\angle A + \angle D = 180^\circ$$

$$\angle B + \angle C = 180^\circ$$

Conceptual

Ans: C

11

from figure

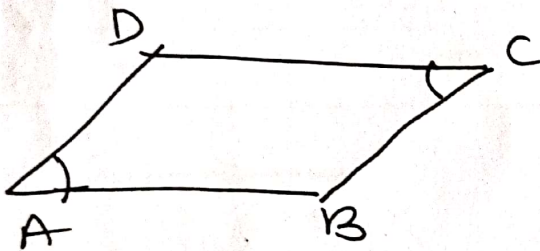
$$\frac{AE}{BE} = \frac{DF}{FC}$$

$$\Rightarrow \frac{AE}{2AE} = \frac{1.5}{FC}$$

$$\Rightarrow FC = 3\text{cm}$$

Ans: B

12



$$\angle A = \angle C$$

$$\Rightarrow 2x + 30^\circ = x + 120^\circ$$

$$\Rightarrow x = 90^\circ$$

Ans: B

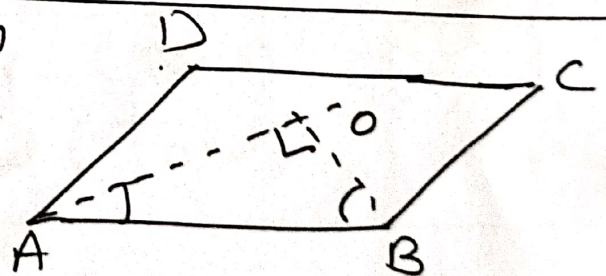
13

ABCD  $\rightarrow$  parallelogram

$$\text{We know, } \angle A + \angle B = 180^\circ$$

$$\Rightarrow \frac{\angle A}{2} + \frac{\angle B}{2} = 90^\circ$$

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



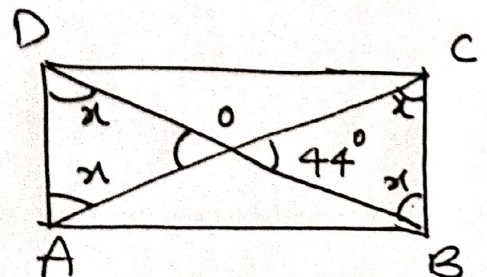
Ans: B

14

$$x + x + 44^\circ = 180^\circ$$

$$\Rightarrow x = 68^\circ$$

$$\therefore \angle OAD = 68^\circ$$



Ans: A

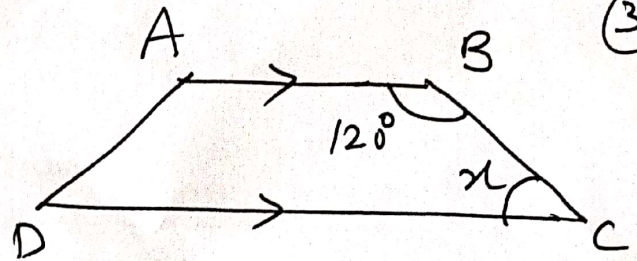


15

We have,

$$x + 120^\circ = 180^\circ$$

$$\Rightarrow x = 60^\circ$$



(3)

Ans: D

## JEE ADVANCED

Q16

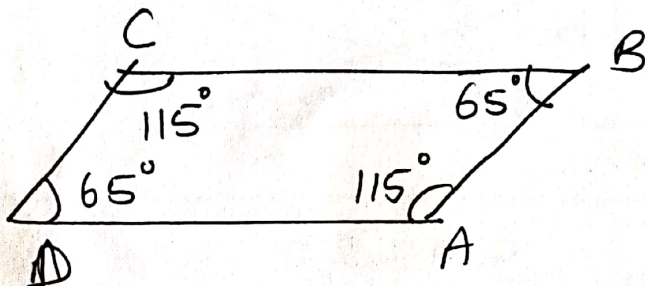
A) Conceptual (True)

B) Conceptual (True)

C) Conceptual (True)

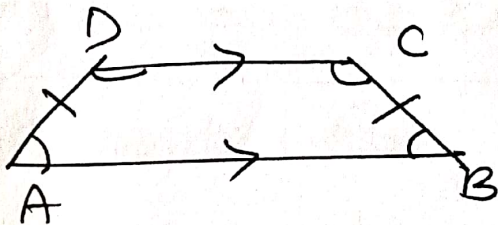
Ans: A, B, C

17



Ans: A, C, D

18



Conceptual

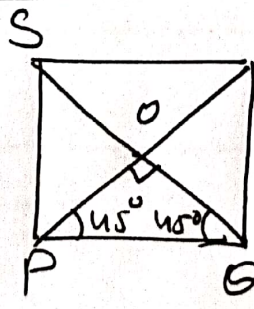
Ans: A, B, C

19

Statement I: Conceptual (True)Statement II: Conceptual (False)

Ans: C

20

Statement I:

R

$$\angle POQ = 45^\circ$$

(True)

Statement II: Conceptual (True)

Ans: A



21. Statement I: Conceptual (True)  
Statement II: Conceptual (True)

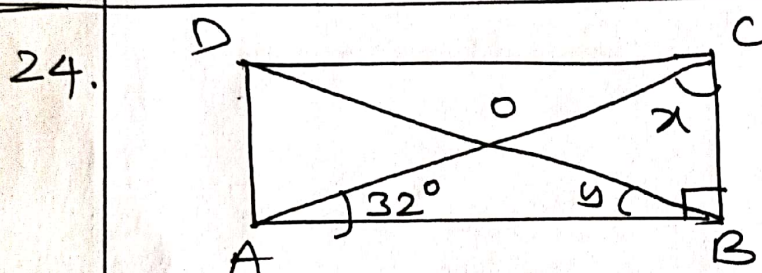
Ans.: A

22. Assertion: Conceptual (True)  
Reason: Conceptual (True)

Ans.: A

23. Assertion: Conceptual (True)  
Reason: Conceptual (True)

Ans.: A



$$x + 32^\circ + 90^\circ = 180^\circ$$

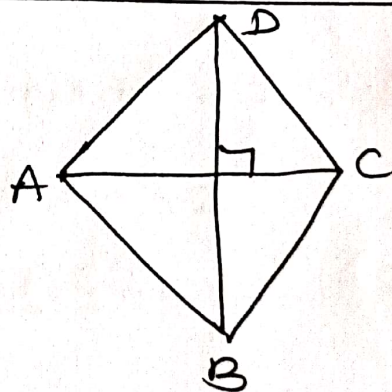
$$\Rightarrow x = 58^\circ$$

Ans.: A

25. We have  $OA = OB$   
 $\Rightarrow y = 58^\circ$

Ans.: C

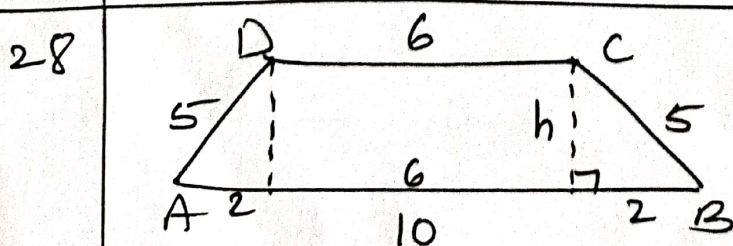
26. Conceptual (B)



Ans.: B

27. Conceptual (A)

Ans.: A



$$h^2 + 2^2 = 5^2$$

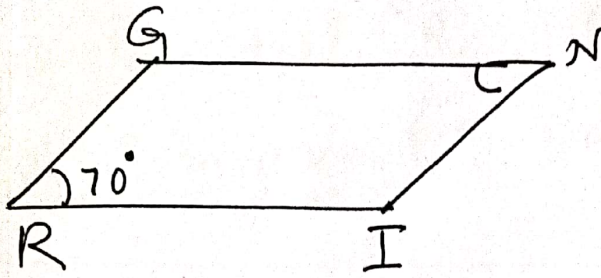
$$h = \sqrt{19}$$

$$h = 4 \text{ (Integral value)}$$

Ans.: 4



29.



We have, RING is a <sup>(5)</sup> parallelogram

$$\therefore \angle N = \angle R = 70^\circ$$

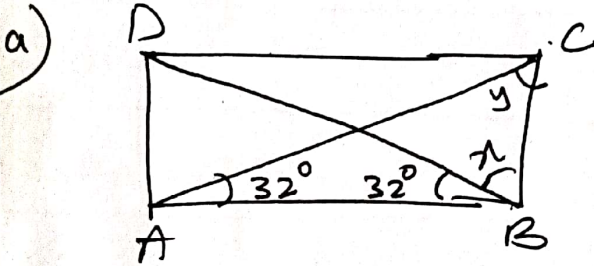
Ans:  $70^\circ$

30

Conceptual

90°

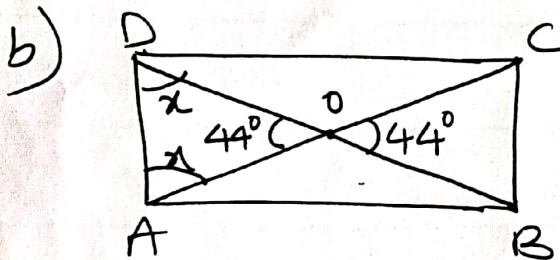
31



$$\therefore 32^\circ + x = 90^\circ$$

$$\Rightarrow x = 58^\circ$$

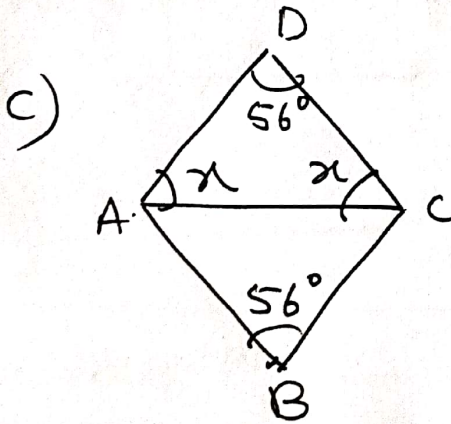
$$\therefore \angle DBC = 58^\circ (q)$$



$$x + x + 44^\circ = 180^\circ$$

$$\Rightarrow x = 68^\circ$$

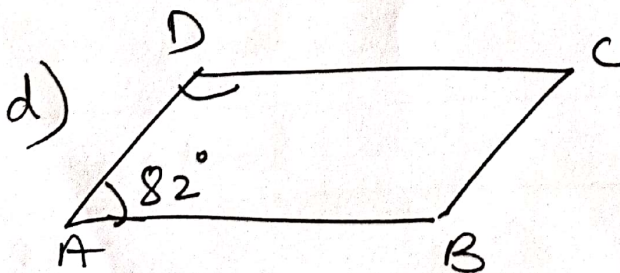
$$\therefore \angle OAD = 68^\circ (r)$$



$$x + x + 56^\circ = 180^\circ$$

$$\Rightarrow x = 62^\circ$$

$$\therefore \angle ACD = 62^\circ (s)$$



$$82^\circ + \angle D = 180^\circ$$

$$\Rightarrow \angle D = 98^\circ (p)$$

Ans: q, r, s, p



32. a) Conceptual (P) c) Conceptual (r) ⑥  
b) Conceptual (q) d) Conceptual (s)  
Ans: P, q, r, s

## LEARNERS TASK (CUES)

01.  $360^\circ$

Ans: C

02. Square

Ans: B

03. Conceptual

Ans: B

04. Conceptual

Ans: A

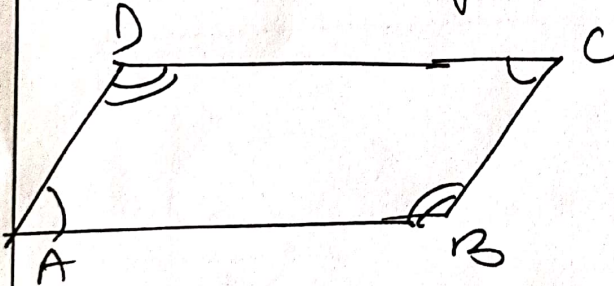
05. Conceptual

Ans: B

06. 2

Ans: A

07. We have in a parallelogram



$$\angle A = \angle C$$

$$\Rightarrow \angle A - \angle C = 0^\circ$$

Ans: A

08. Conceptual

Ans: B

09. Conceptual

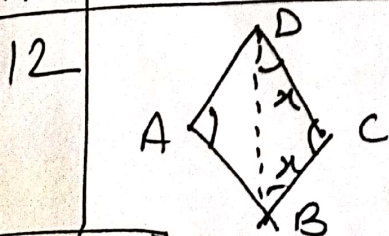
Ans: A

10. Conceptual

Ans: D

11.  $360^\circ$

Ans: D



$$70^\circ + x + x = 180^\circ$$

$$\Rightarrow x = 55^\circ$$

Ans: C



13 Conceptual

Ans: A (1)

14. Conceptual

Ans: D

### JEE MAINS LEVEL

01. Conceptual

Ans: A

02.  $180^\circ$

Ans: B

03 Rectangle

Ans: B

04. Equal

Ans: A

05 ~~Both bisect each~~

Bisects the other  
(or) is bisected by the other

Ans: A, B

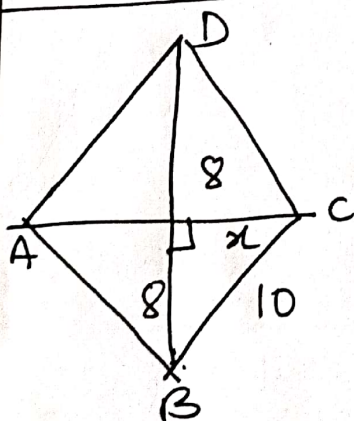
06  $x^\circ + 36^\circ = 36^\circ \Rightarrow x = 4^\circ$

Ans: C

07  $90^\circ$

Ans: B

08



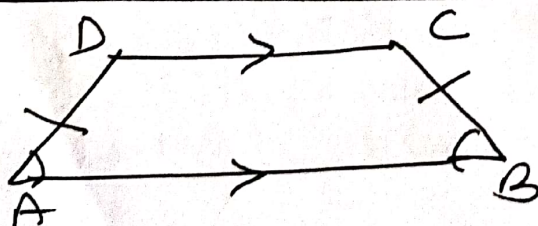
$$8^2 + x^2 = 10^2$$

$$\Rightarrow x = 6$$

$$\therefore AC = 2 \times 6 = 12 \text{ cm}$$

Ans: D

09.



$$\therefore \angle A = \angle B$$

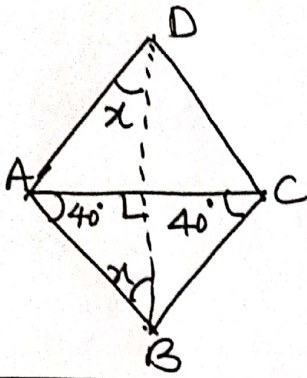
Ans: A

10.  $75^\circ + 90^\circ + 75^\circ + x = 360^\circ$   
 $\Rightarrow x = 120^\circ$

Ans: D



11.



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

$$\Rightarrow x = 50^\circ$$

$$\therefore \angle ADB = 50^\circ$$

Ans: C

## JEE ADVANCED

12.

Conceptual

Ans: A, B, C

13.

Conceptual

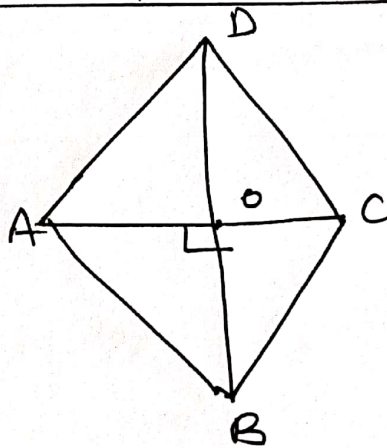
Ans: B, C

14.

Statement I: Conceptual (True)Statement II: Conceptual (True)

Ans: A

15.

Statement I:

$$\angle AOB = 90^\circ$$

(True)

Statement II: Conceptual (False)

Ans: C

16.

Assertion: Conceptual (True)Reason: Conceptual (True)

Ans: A

17.

Assertion: Conceptual (False)Reason: Conceptual (True)

Ans: D



(9)

18

$$AO = OC = \frac{1}{2} \times AC = \frac{1}{2} \times 24 = 12 \text{ cm}$$

Ans: B

19.

$$\text{Area} = \frac{1}{2} d_1 \cdot d_2 = \frac{1}{2} \times 24 \times 18 = \underline{216 \text{ sq. cm}}$$

Ans:

20.

Conceptual

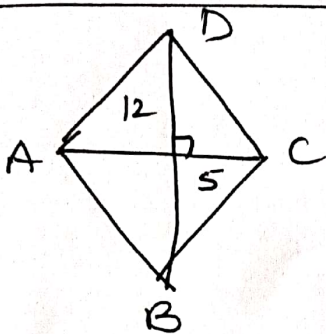
Ans: B

21.

Conceptual

Ans: C

22.



$$CD^2 = 12^2 + 5^2$$

$$= 144 + 25 = 169$$

$$\therefore CD = 13$$

Ans: 13

23.

Square, Rhombus, parallelogram, Rectangle

Ans: 4

24

a)  $\angle B + \angle D = 180^\circ$  (q)

b)  $360^\circ$  (r)

c) Convex quadrilateral (s)

d) Concave quadrilateral (p)

Ans: q, r, s, p

25

a) Conceptual (p)

b) Conceptual (q)

c) Conceptual (r)

d) Conceptual (s)

Ans: p, q, r, s

 $\Rightarrow$  TIT E END  $\Leftarrow$