

# INTEGRATED

①

Class: VI, MATHEMATICS

## 9. PERIMETER & AREA

### TEACHING TASK (JEE MAIN)

01. Area of triangle =  $\frac{1}{2} \times b \times h$

$$= \frac{1}{2} \times 10 \times 6 = 30 \text{ m}^2$$

Ans: B

03 Area of rectangle =  $15 \times 7 = 105 \text{ m}^2$

Ans: A

04 Perimeter =  $2(l + b)$

$$= 2(10 + 5) = 30 \text{ cm}$$

Ans: A

05 Area =  $\frac{1}{2} \times 8 \times 5 = 20 \text{ cm}^2$

Ans: A

06 Perimeter =  $2(l + b)$

$$\Rightarrow 80 = 2(2b + b) \Rightarrow b = 14$$

Ans: B

07  $A = \frac{1}{2} \times b \times h$

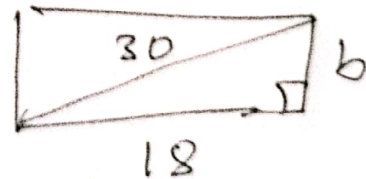
$$\Rightarrow h = 8$$

$$\Rightarrow 72 = \frac{1}{2} \times 18 \times h$$

Ans: A

08  $18^2 + b^2 = 30^2$

$$\Rightarrow b = 24$$



Ans: A

09 Area =  $s^2 \Rightarrow 784 = s^2 \Rightarrow s = \sqrt{784}$

$$\Rightarrow s = 28 \text{ cm}$$

Ans: B

10. Area = 180  
 $\Rightarrow l \times b = 180$   
 $\Rightarrow 20 \times b = 180$   
 $\Rightarrow b = 9$

perimeter =  $2(l+b)$   
 $= 2(20+9)$   
 $= 58 \text{ cm}$

Ans: B

### ADVANCED

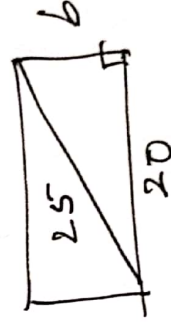
11.  $l = 18 \text{ m}, b = 6 \text{ m}$   
 perimeter =  $2(l+b)$   
 $= 2(18+6)$   
 $= 48 \text{ mt}$

Area =  $l \times b$   
 $= 18 \times 6$   
 $= 108 \text{ mt}^2$

Ans: A, B

12.  $l = 10 \text{ mt}, b = 4 \text{ mt}$   
 $p = 2(l+b) = 2(10+4) = 28 \text{ mt}$   
 Area =  $l \times b = 10 \times 4 = 40 \text{ mt}^2$

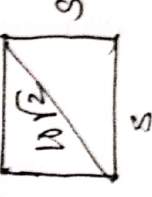
Ans: A, C



13. Statement I:  
 $25^2 = 20^2 + b^2$   
 $\Rightarrow b = 15 \text{ cm (True)}$

Statement II: Perimeter =  $2(l+b)$   
 $= 2(25+70)$   
 $= 190$  (False)

Ans: C



14. Statement I:  
 $s^2 + s^2 = (10\sqrt{2})^2$   
 $\Rightarrow s = 10$  (True)

Statement II: Area =  $10^2 = 100$  (True)

Ans: C

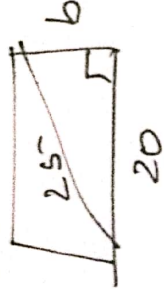
15 Assertion:

$$20^2 + b^2 = 25^2$$

$$\Rightarrow b = 15 \text{ (True)}$$

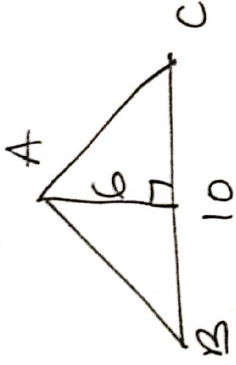
Reason: Conceptual (True)

Ans: A



(3)

16 Assertion:

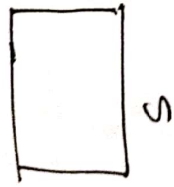


We can not find perimeter, with this data (false)

Reason: Conceptual (True)

Ans: D

17.



$$\text{Perimeter} = 48$$

$$\Rightarrow 4s = 48$$

$$\Rightarrow s = 12$$

$$2(l + b) = 48$$

$$\Rightarrow 2(12 + b) = 48$$

$$\Rightarrow b = 8$$

Ans: C

$$18 \text{ Area of square} = s^2 = 12^2 = 144$$

$$\text{Area of rectangle} = l \times b = 16 \times 8 = 128 \text{ cm}^2$$

Square has Larger Area

Ans: A

19.

$$\text{length} = \text{breadth} = b, \text{ length} = 3b$$

$$\text{Perimeter rectangle} = P = 2(l + b)$$

$$\Rightarrow 64 = 2(b + 3b)$$

$$\Rightarrow b = 8$$

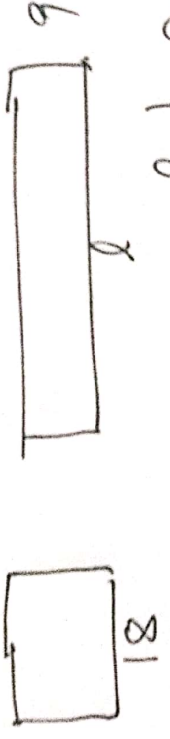
Ans: C

4

20 Area =  $l \times b = 24 \times 8 = 192$

Ans: A

21.



Areas are equal

$\Rightarrow 9^2 = l \times b$   
 $\Rightarrow 18^2 = l \times 9$   
 $\Rightarrow l \times b = 36$

Perimeter of rectangle  
 $= 2(l+b)$   
 $= 2(36+9)$   
 $= 90$

Ans: 90

22 breadth =  $b$ , length =  $2b$

Area =  $l \times b$   
 $\Rightarrow 242 = 2b \times b$   
 $\Rightarrow b = 11$

length =  $2b$   
 $= 2 \times 11$   
 $= 22 \text{ cm}$

Ans: 22

23 a)  $l \times b = 96$

$\Rightarrow 12 \times b = 96$

$\Rightarrow b = 8 \text{ (x)}$

b)  $4s = 100$

$\Rightarrow s = 25 \text{ (s)}$

c)  $\frac{1}{2} \times b \times h = 30$

$\Rightarrow \frac{1}{2} \times 12 \times h = 30$

$\Rightarrow h = 5 \text{ cm (9)}$

d) Perimeter =  $2(l+b)$

$= 2(15+10)$

$= 50 \text{ (P)}$

Ans: x, s, 9, P

24 a) Perimeter = 4s

$$= 4 \times 10$$

$$= 40 \text{ (cm)}$$

b) Area = l x b

$$= 15 \times 8$$

$$= 120 \text{ (cm}^2\text{)}$$

c) Perimeter = a + b + c

$$= 4 + 6 + 5$$

$$= 15 \text{ cm (U)}$$

d) Area =  $\frac{1}{2} \times b \times h$

$$= \frac{1}{2} \times 14 \times 6$$

$$= 42 \text{ (S)}$$

e) Perimeter = 2(l + b)

$$= 2(20 + 5)$$

$$= 50 \text{ (P)}$$

f) Area =  $s^2 = 7^2 = 49 \text{ (t)}$

Ans: 9, 8, 10, 5, 14, 6, 7

### LEARNER'S TASK (CUES)

01.

Rectangle Area =  $b \times h$

Triangle Area =  $\frac{1}{2} \times b \times h$

Rectangle Area is double

Ans: B

02

Conceptual

Ans: C

03

$$\text{Area} = \frac{1}{2} \times b \times h = 0$$

$$\Rightarrow b = 0 \text{ or } h = 0$$

Ans: C

04.

All are possible

Ans: D

05

perimeters are equal

Ans: B

06

Conceptual

Ans: B

6

07	Conceptual	Ans: A
08	Conceptual	Ans: C
09	Conceptual	Ans: B
10	Conceptual	Ans: B

JEE MAINS LEVEL

01.	Perimeter = $4 \times 5$ $= 4 \times 6 = 24 \text{ cm}$	Ans: C
02	Area = $l \times b$ $= 16 \times 4 = 40$	Ans: A
03	Perimeter = $5 + 7 + 8 = 20 \text{ cm}$	Ans: A
04	Perimeter = $4 \times 5$ $= 4 \times 9 = 36 \text{ m}$	Ans: B
05	Perimeter = $2(l + b)$ $= 2(8 + 3)$ $= 22$	Ans: A
06	Area = $s^2$ $= 12^2$ $= 144$	Ans: C
07	Area = $\frac{1}{2} \times b \times h$ $= \frac{1}{2} \times 21 \times 8 = 84$	Ans: B

7

68 Area = 400  
 $s^2 = 400$   
 $\Rightarrow s = 20$

Perimeter =  $4 \times s$   
 $= 4 \times 20$   
 $= 80 \text{ cm}$

Ans: B

69 Area = 154  
 $l \times b = 154$   
 $\Rightarrow l \times 11 = 154$

$l = 14 \text{ cm}$

Ans: D



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

Ans: A

### JEE ADVANCED

11. Perimeter =  $4 + 7 + 9$   
 $= 20 \text{ cm}$

Ans: A

12.  $l = 16, b = 9$

Area =  $16 \times 9$   
 $= 144 \text{ m}^2$

Ans: A/D

13. Statement I:

Area = ~~405~~  
 $= \frac{1}{2} \times b \times h = 405$   
 $\Rightarrow \frac{1}{2} \times 9 \times 10 = 45 \text{ (True)}$

Statement II: Conceptual (True)

Ans: A

2

14. Statement I:

$$\text{Initial Area} = s^2$$

$$\text{New Area} = (3s)^2 = 9s^2 = 9 \times \text{Initial Area} \quad (\text{True})$$

Statement II:

$$\text{Initial perimeter} = 4s$$

$$\text{New perimeter} = 4(3s) = 12s \quad (\text{False})$$

Ans: C

15. Assertion: Area = 81

$$\Rightarrow s^2 = 81$$

$$\Rightarrow s = 9$$

$$\text{perimeter} = 4s$$

$$= 4 \times 9$$

$$= 36 \text{ cm}$$

(True)

Reason: Conceptual (True)

Ans: A

16

Assertion:

$$\text{Initial perimeter} = 4s$$

$$\text{New perimeter} = 4(2s)$$

$$= 8s$$

$$= 2(4s)$$

$$= 2 \times \text{Initial perimeter} \quad (\text{True})$$

Reason: Initial Area =  $s^2$

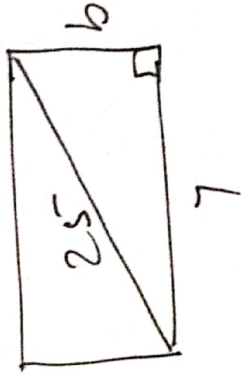
$$\text{New Area} = (2s)^2$$

$$= 4s^2$$

$$= 4 \times \text{Initial Area} \quad (\text{False})$$

Ans: C

17.



$$7^2 + b^2 = 25^2$$

$$\Rightarrow b = 24$$

9

7

Ans: D

18

$$\text{Area} = l \times b$$

$$= 7 \times 24 = 168 \text{ cm}^2$$

Ans: A

19.



$$\text{Area} = \frac{1}{2} \times 6 \times 8$$

$$= 24 \text{ cm}^2$$

Ans: C

20.

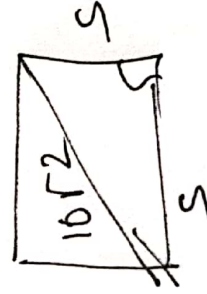


$$\Rightarrow x^2 = 6^2 + 8^2$$

$$\Rightarrow x = 10$$

Ans: A

21.



$$s^2 + s^2 = (10\sqrt{2})^2$$

$$\Rightarrow 2s^2 = 200$$

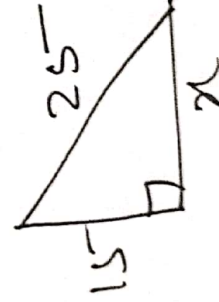
$$\Rightarrow s^2 = 100$$

$$\Rightarrow s = 10$$

$$\text{Perimeter} = 4 \times s = 4 \times 10 = 40 \text{ cm}$$

Ans: 40

22



$$x^2 + 15^2 = 25^2$$

$$\Rightarrow x = 20$$

$$\frac{625}{225}$$

$$\frac{400}{400}$$

$$\text{Ans: 20}$$

23

$$a) 2(l+b) = 50$$

$$\Rightarrow 2(l+10) = 50$$

$$\Rightarrow l = 15 \text{ (r)}$$

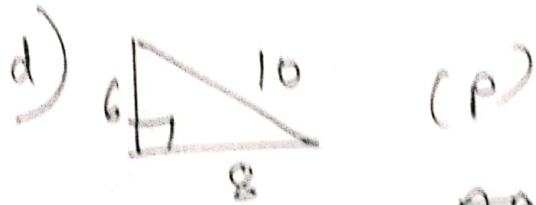
$$b) s^2 = 36$$

$$\Rightarrow s = 6 \text{ (p)}$$

$$c) \text{perimeter} = 3s$$

$$3s = 54$$

$$\Rightarrow s = 18 \text{ (q)}$$



Ans: r, p, q, p

$$24) a) \text{perimeter} = 4s = 4 \times 6 = 24 \text{ cm (u)}$$

$$b) \text{Area} = 7 \times 4 = 28 \text{ cm}^2 \text{ (t)}$$

$$c) \text{perimeter} = 5 + 7 + 8 = 20 \text{ cm (e)}$$

$$d) \text{Area} = \frac{1}{2} \times b \times h$$

$$= \frac{1}{2} \times 10 \times 5 = 25 \text{ m}^2 \text{ (o)}$$

$$e) \text{perimeter} = 2(l+b)$$

$$= 2(12+9)$$

$$= 42 \text{ cm (-)}$$

21 x 2

$$f) \text{Area} = s^2$$

$$= 9^2 = 81 \text{ (p)}$$

Ans: u, t, e, o, -  
p.

→ THE END ←