Area, Perimeter Questions and Answers Pdf

1. A housing society has been allotted a square piece of land measuring 2550.25 sq.m. What is the side of the plot?

a. 50.25 m

b. 50.5 m

c. 50.65 m

d. None of these

Ans: B

$$\text{Side} = \sqrt{2550.25} = \sqrt{\frac{255025}{100}} = \frac{505}{10} = 50.5 \text{ m.}$$

2. The perimeter of a square and rectangle is the same. If the rectangle is 12 cm by 10 cm, then by what percentage is the area of the square more than that of the rectangle?

a. 2/3

b. 1

c. 1/3

d. 5/6

Ans: D

Perimeter of the square = Perimeter of the rectangle
$= 2(12 + 10)$ cm $= 44$ cm.

Side of the square $= \left(\frac{44}{4}\right)\text{cm} = 11\text{ cm}$.

Area of the rectangle $= (12 \times 10)\ \text{cm}^2 = 120\ \text{cm}^2$.

Area of the square $= (11 \times 11)\ \text{cm}^2 = 121\ \text{cm}^2$.

$\therefore$ Required percentage $= \left(\frac{1}{120} \times 100\right)\% = \frac{5}{6}\%$.

3. The length and breadth of the floor of the room are 20 feet and 10 feet respectively. Square tiles of 2 feet length of different colours are to be laid on the

floor. Black tiles are laid in the first row on all sides. If white tiles are laid in the one third of the remaining and blue tiles in the rest, how many blue tiles will be there?

a. 16

b. 24

c. 32

d. 48

Ans: A

Area left after laying black tiles = $[(20 - 4) \times (10 - 4)]$ sq. ft = 96 sq. ft.

Area under white tiles = $\left(\frac{1}{3} \times 96\right)$ sq. ft = 32 sq. ft

Area under blue tiles = (96 – 32) sq. ft = 64 sq. ft.

Number of blue tiles = $\frac{64}{(2 \times 2)} = 16.$

4. The length of a rectangular plot is thrice its breadth. If the area of the rectangular plot is 7803 sq. metres, What is the breadth of the rectangular plot?

a. 51 m

b. 88 m

c. 104 m

d. 153 m

Ans: A

Let the breadth of the plot be x metres. Then, length of the plot = $(3x)$ meters.

$x \times 3x = 7803 \Rightarrow 3x^2 = 7803 \Rightarrow x^2 = 2601$

$\Rightarrow x = \sqrt{2601} = 51$ m.

5. Find the area of a square, one of whose diagonals is 3.8 m long.

a. 5.22

b. 6.22

c. 7.22

d. 8.22

Ans: C

Sol. Area of the square $= \frac{1}{2} \times (\text{diagonal})^2 = \left(\frac{1}{2} \times 3.8 \times 3.8\right) \text{m}^2 = 7.22 \text{ m}^2.$

6. The area of a square is 1024 sq.cm. What is the ratio of the length to the breadth of a rectangle whose length is twice the side of the square and breadth is 12 cm less than the side of this square?

a. 5 : 18

b. 16 : 5

c. 14 : 5

d. 32 : 5

Ans: B

Area of square $= \sqrt{1024}$ cm $= 32$ cm.

Length of rectangle = (2 × 32) cm = 64 cm. Breadth of rectangle = (32 – 12) cm = 20 cm.

∴ Required ratio = 64 : 20 = 16 : 5.

7. The area of a rectangle is 252 cm² and its length and breadth are in the ratio of 9 : 7 respectively. What is its perimeter?

a. 64 cm

b. 68 cm

c. 96 cm

d. 128 cm

Ans: A

Let the length and breadth of the rectangle be $(9x)$ cm and $(7x)$ cm respectively.

Then, $9x \times 7x = 252 \Rightarrow 63x^2 = 252 \Rightarrow x^2 = 4 \Rightarrow x = 2$.

So, length = 18 cm, breadth = 14 cm.

$\therefore$ Perimeter = 2 (18 + 14) cm = 64 cm.

8. A rectangular garden (60 m x 40 m) is surrounded by a road of width 2m, the road is covered by tiles and the garden is fenced. If the total expenditure is Rs.51600 and rate of fencing is Rs.50 per metre, then the cost of covering 1 sq.m of road by tiles is

a. Rs. 10

b. Rs. 50

c. Rs. 100

d. Rs. 150

Ans: C

Length of the fence = 2(60 + 40) m = 200 m.

Cost of fencing = ₹ (200 × 50) = ₹ 10000.

Area of the road = $[(64 \times 44) - (60 \times 40)]\ m^2$

$= (2816 - 2400)\ m^2 = 416\ m^2$.

Let the cost of tiling the rood be ₹ x per sq. m.

$\therefore 416x + 10000 = 51600 \Rightarrow 416x = 41600 \Rightarrow x =$ ₹ 100.

9. Find the largest size of a bamboo that can be placed in a square of area 100 sq.m.

a. 14.11 m
b. 14.12 m
c. 14.14 m
d. 14.18 m
Ans: C

Side of the square = $\sqrt{100}$ m = 10 m.

Largest size of bamboo = Length of diagonal of the square

$= 10\sqrt{2}$ m. = (10 × 1.414) m = 14.14 m.

10. The perimeter of a rectangular field is 480 metres and the ratio between the length and the breadth is 5 : 3. The area is

a. 1350 sq.m

b. 1550 sq.m

c. 13500 sq.m

d. 15500 sq.m

Ans: C

Let the length and breadth of the field be $(5x)$ metres and $(3x)$ metres respectively.

Then, $2(5x + 3x) = 480 \Rightarrow 8x = 240 \Rightarrow x = 30$.

So, length = 150 m, breadth = 90 m.

$\therefore$ Area of the field = (150×90) sq. m = 13500 sq. m.