PM SHRI KENDRIYA VIDYALAYA GACHIBOWLI,GPRA CAMPUS,HYD-32
PRACTICE PAPER 05 (2023-24)
MENSURATION (ANSWERS)

SUBJECT: MATHEMATICS	MAX. MARKS : 40
CLASS : VI	DURATION : 1½ hr

General Instructions:
(i).   **All** questions are compulsory.
(ii). This question paper contains 2**0** questions divided into five Sections A, B, C, D and E.
(iii). **Section A** comprises of **6 MCQs** of **1 mark** each. **Section B** comprises of **1 CCT question** of **4 marks** each which contains **4 MCQs**. **Section C** comprises of 3 questions of **2 marks** each. **Section D** comprises of 4 questions of **3 marks** each and **Section E** comprises of 3 questions of **4 marks** each.

SECTION – A
Questions 1 to 6 carry 1 mark each.

1. The length of a rectangle is 150 cm. If its breadth is 1m, then its perimeter is
   (a) 7 m   (b) 5 m   (c) 6 m   (d) none of these
   Ans: (b) 5 m
   Here, length = 150 cm = 1.5 m and breadth = 1 m
   Perimeter = 2(l + b) = 2(1.5 + 1) = 2 x 2.5 = 5 m

2. The side of a square is 8 cm. If its side is doubled, then its new perimeter is
   (a) 64 cm   (b) 81 cm   (c) 121 cm   (d) none of these
   Ans: (a) 64 cm
   New side = 8 x 2 = 16 cm
   New perimeter = 4 x side = 4 x 16 = 64 cm

3. If the sides of a square are halved, then its area
   (a) remains same   (b) becomes half
   (c) becomes one fourth   (d) becomes double
   Ans: (c) becomes one fourth
   Consider x as the side of the square.
   We know that area of a square = Side × Side = x × x = x^2
   If the sides are halved, we get new side = x/2
   So the new area = $(x/2)^2 = x^2/4$
   From this we know that the area has become one fourth of its previous value.

4. If the area of a square is 64 cm^2, then its perimeter is
   (a) 25 cm   (b) 32 cm   (c) 15 cm   (d) none of these
   Ans: (b) 32 cm
   Area = side x side = 64 cm^2 ⇒ side = 8 cm
   ⇒ Perimeter = 4 x side = 4 x 8 = 32 cm

5. If the area of rectangle increases from 2 cm² to 4 cm² the perimeter will
   (a) increase   (b) decrease   (c) remains same   (d) none of these
   Ans: (a) increase

6. The sides of a rectangle are in the ratio 5: 4. If its perimeter is 72 cm, then its length is
   (a) 40 cm   (b) 20 cm   (c) 30 cm   (d) 60 cm
   Ans: (b) 20 cm
   Consider the sides of the rectangle as 5x and 4x.

We know that, perimeter of rectangle = 2 (Length + Breadth)
By substituting the values, we get 72 = 2 (5x + 4x)
⇒ 72 = 2 × 9x ⇒ 72 = 18x ⇒ x = 72/18 = 4
Hence, the length of the rectangle = 5x = 5 × 4 = 20 cm

SECTION – B(CCT Questions)
Questions 7 to 10 carry 1 mark each.

CCT Question

Kiran wants to find the area of the figure using area of rectangle. She splits the figure into four rectangles and then she coloured the four rectangles with yellow, orange, green and grey colour. (The measures are given in centimetres)
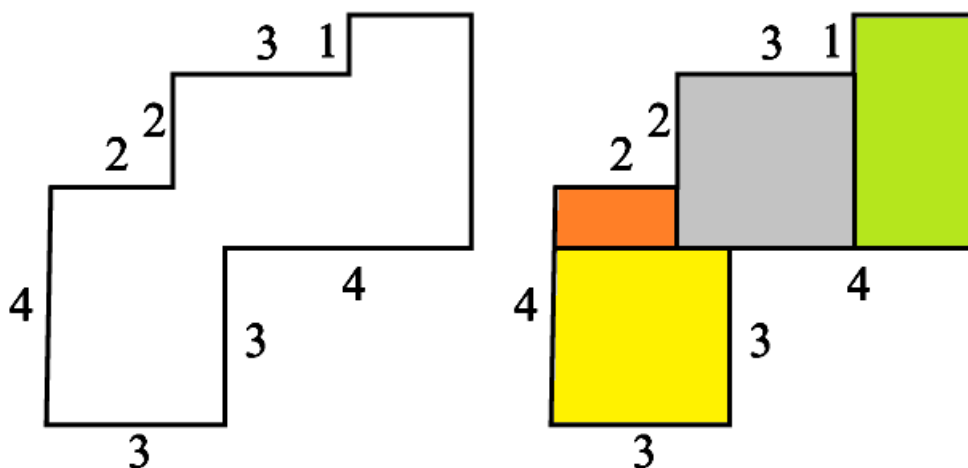
Based on the above, answer the following questions

7. Find the area of orange colour.
    (a) 2 cm^2 (b) 9 cm^2 (c) 8 cm^2 (d) 10 cm^2
    Ans: (a) 2 cm^2
    Area of orange region = 1× 2 = 2 cm^2

8. Find the area of yellow colour.
    (a) 2 cm^2 (b) 9 cm^2 (c) 8 cm^2 (d) 10 cm^2
    Ans: (b) 9 cm^2
    Area of yellow region = 3 × 3 = 9 cm^2

9. Find the area of grey colour.
    (a) 2 cm^2 (b) 9 cm^2 (c) 8 cm^2 (d) 10 cm^2
    Ans: (b) 9 cm^2
    Area of grey region = 3 × 3 = 9 cm^2

10. Find the total area of the figure.
    (a) 20 cm^2 (b) 29 cm^2 (c) 28 cm^2 (d) 30 cm^2
    Ans: (c) 28 cm^2
    Area of brown region = 2 × 4 = 8 cm^2
    Total area = 9 + 2 + 9 + 8 = 28 cm^2

SECTION – C
Questions 11 to 13 carry 2 marks each.

11. A room is 4 m long and 3 m 50 cm wide. How many square metres of carpet are needed to cover the floor of the room?
    Ans: Given l = 4m. b = 3 m 50 cm = 3.50 m
    Area = l × b = 4 × 3.50 = 14 m^2
    ∴ The carpet required to cover the floor is 14 m^2.

12. Two sides of a triangle are 12 cm and 14 cm. The perimeter of the triangle is 36 cm. What is its third side?
    Ans: Let x cm be the third side
    Perimeter of triangle = 36 cm
    ⇒ 12 + 14 + x = 36
    ⇒ 26 + x = 36
    ⇒ x = 36 – 26
    ⇒ x = 10 cm
    ∴ The third side is 10 cm.

13. The lid of a rectangular box, with sides 40 cm by 10 cm, is sealed all around with tape. What is the length of the tape required?
    Ans: Length of required tape = Perimeter of rectangle
    = 2 (Length + Breadth) = 2 (40 + 10) = 2 (50) = 100 cm
    ∴ The required length of tape is 100 cm.

SECTION – D
Questions 14 to 17 carry 3 marks each.

14. A rectangular piece of land measures 0.7 km by 0.5 km. Each side is to be fenced with 4 rows of wires. What is the length of the wire needed?
    Ans: Perimeter of the field = 2 (Length + Breadth)
    = 2 (0.7 + 0.5) = 2 (1.2) = 2 × 1.2 = 2.4 km
    Each side is to be fenced with 4 rows = 4 × 2.4 = 9.6 km
    ∴ The total length of the required wire is 9.6 km.

15. Five square flower beds, each of sides 1 m, are dug on a piece of land 5 m long and 4 m wide. What is the area of the remaining part of the land?
    Ans: Area of flower square bed = 1 × 1 = 1 m^2
    Area of 5 square bed = 1 × 5 = 5 m^2
    Area of land = 5 × 4 = 20 m^2
    Remaining part of the land = Area of land – Area of 5 square bed
    = 20 – 5 = 15 m^2
    ∴ The remaining part of the land is 15 m^2.

16. The length and breadth of the three rectangles are as given below:
    (a) 9 m and 6 m
    (b) 17 m and 3 m
    (c) 4 m and 14 m
    Which one has the largest area, and which one has the smallest?
    Ans: (a) Area of rectangle = l × b = 9 × 6 = 54 m^2
    (b) Area of rectangle = l × b = 17 × 3 = 51 m^2

(c) Area of rectangle $= l \times b = 4 \times 14 = 56$ m^2
The area of rectangle 56 m^2, i.e. (c), is the largest area and the area of rectangle 51 m^2, i.e. (b), is the smallest area

17. Sweety runs around a square park of side 75 m. Bulbul runs around a rectangular park with a length of 60 m and a breadth of 45 m. Who covers less distance?
Ans: Perimeter of square $= 4 \times$ side $= 4 \times 75 = 300$ m
$\therefore$ The distance covered by Sweety is 300 m
Perimeter of the rectangular park $= 2$ (Length + Breadth)
$= 2 (60 + 45) = 2 (105) = 2 \times 105 = 210$ m
$\therefore$ The distance covered by Bulbul is 210 m
Hence, Bulbul covers less distance than Sweety.

SECTION – E
Questions 18 to 20 carry 4 marks each.

18. How many tiles whose length and breadth are 12 cm and 5 cm, respectively, will be needed to fit in a rectangular region whose length and breadth are respectively:
(a) 100 cm and 144 cm? (b) 70 cm and 36 cm?
Ans: (a) Area of rectangle $= 100 \times 144 = 14400$ cm
Area of one tile $= 5 \times 12 = 60$ cm^2
Number of tiles $=$ (Area of rectangle) / (Area of one tile)
$= 14400 / 60 = 240$
Hence, 240 tiles are needed
(b) Area of rectangle $= 70 \times 36 = 2520$ cm^2
Area of one tile $= 5 \times 12 = 60$ cm^2
Number of tiles $=$ (Area of rectangle) / (Area of one tile) $= 2520 / 60 = 42$
Hence, 42 tiles are needed.

19. What will happen to the area of rectangle if its
(i) Length and breadth are tripled
(ii) Length is doubled and breadth is same
Ans:
(i) Length and breadth are trebled
Consider l as the initial length and b as the initial breadth
So the original area $= l \times b$
If the length and breadth are tripled it becomes three times more than the original value
New length $= 3l$
New breadth $= 3b$
New area of the rectangle $= 3l \times 3b = 9lb$
Hence, the area of the rectangle becomes 9 times more than its original area.
(ii) Length is doubled and breadth is same
Consider l as the initial length and b as the initial breadth
So the original area $= l \times b$
If the length is doubled and breadth is same we get
New length $= 2l$
New breadth $= b$
New area of the rectangle $= 2l \times b = 2lb$
Hence, the area of the rectangle becomes 2 times more than the original area.

20. A marble tile measures 10 cm × 12 cm. How many tiles will be required to cover a wall of size 3 m × 4 m? Also, find the total cost of the tiles at the rate of Rs 2 per tile.

Ans: Measure of marble tile = 10 cm × 12 cm

Size of the wall = 3 m × 4 m = 300 cm × 400 cm

So the area of marble tile = 10 cm × 12 cm = 120 cm^2

Area of wall = 300 cm × 400 cm = 120000 cm^2

No. of tiles required to cover the wall = Area of wall/ Area of one tile

Substituting the values

No. of tiles required to cover the wall = 120000/120 = 1000 tiles

It is given that

Cost of one tile = Rs 2

So the cost of 1000 tiles = 1000 × 2 = Rs 2000

Hence, 1000 number of tiles are required to cover the wall and the cost is Rs 2000.

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