

Push Tasks — Answers



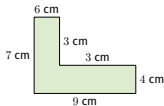
1. Find its area and perimeter.

Solution

$$\text{Area: } 6 \times 7 + 3 \times 4 = 42 + 12 = 54 \text{ cm}^2$$

Perimeter:

$$7 + 6 + 3 + 3 + 4 + 9 = 32 \text{ cm}$$



2. A 12 cm by 8 cm rectangle has a 4 cm square removed from one corner. Find the area and perimeter of the remaining shape.

Solution

$$\text{Area: } 12 \times 8 - 4 \times 4 = 96 - 16 = 80 \text{ cm}^2$$

$$\text{Perimeter unchanged: } 2(12 + 8) = 40 \text{ cm}$$

3. An 11 cm by 6 cm rectangle has a 2 cm square removed from one corner. Find the area and perimeter of the remaining shape.

Solution

$$\text{Area: } 11 \times 6 - 2 \times 2 = 66 - 4 = 62 \text{ cm}^2$$

$$\text{Perimeter unchanged: } 2(11 + 6) = 34 \text{ cm}$$

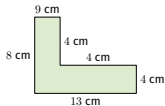
4. Find its area and perimeter.

Solution

$$\text{Area: } 9 \times 8 + 4 \times 4 = 72 + 16 = 88 \text{ cm}^2$$

Perimeter:

$$8 + 9 + 4 + 4 + 4 + 13 = 42 \text{ cm}$$



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5. A 15 cm by 9 cm rectangle has a 5 cm square removed from one corner. Find the area and perimeter of the remaining shape.

Solution

Area: $15 \times 9 - 5 \times 5 = 135 - 25 = 110$
 cm^2

Perimeter unchanged: $2(15 + 9) = 48$
 cm

7. A rectangle has a square corner removed to make an L-shape. Explain why removing the corner does not change the shape's perimeter.

Solution

Two sides shorten by s ; two new edges of length s replace the corner. The losses and gains cancel, so **perimeter is unchanged.**

Area of L-shapes and composite shapes

6. A 10 cm by 10 cm square has a 3 cm square removed from one corner. Find the area and perimeter of the remaining shape.

Solution

Area: $10 \times 10 - 3 \times 3 = 100 - 9 = 91$
 cm^2

Perimeter unchanged: $2(10 + 10) = 40$
 cm

8. A composite shape is formed from a 10 cm by 10 cm rectangle with a square corner removed. Its area is 91 cm^2 . Find the side length of the removed square.

Solution

$10 \times 10 - s^2 = 91$
 $s^2 = 100 - 91 = 9$
 $s = 3 \text{ cm}$

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9. A field is a 40 m by 25 m rectangle with a 10 m square removed from one corner for a pond. What area of the field is left for farming?

Solution

$$40 \times 25 = 1000$$

$$10 \times 10 = 100$$

$$\text{Farming area} = 1000 - 100 = 900 \text{ m}^2$$

11. A square lawn of side 12 m has a square corner of side x m removed for a shed, leaving an area of 128 m^2 . Form an equation and find x .

Solution

$$12^2 - x^2 = 128$$

$$144 - x^2 = 128$$

$$x^2 = 16 \Rightarrow x = 4 \text{ m}$$

10. A 6 m by 8 m rectangle has a 2 m by 3 m rectangle removed from one corner. Show that splitting the L-shape into two rectangles gives the same area as subtracting the corner.

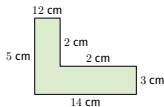
Solution

$$\text{Subtract: } 6 \times 8 - 2 \times 3 = 48 - 6 = 42$$

$$\text{Add: } 6 \times 6 + 2 \times 3 = 36 + 6 = 42$$

$$\text{Both agree: } 42 \text{ m}^2$$

12. Find its area and perimeter.



Solution

$$\text{Area: } 12 \times 5 + 2 \times 3 = 60 + 6 = 66 \text{ cm}^2$$

Perimeter:

$$5 + 12 + 2 + 2 + 3 + 14 = 38 \text{ cm}$$