UNIT 11

Area and Perimeter

Revision Notes

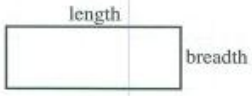
1. The **perimeter** of a plane figure is the total length of its outline.

(a) Perimeter of a square = 4 × length
(b) Perimeter of a rectangle = 2 × (length + breadth)

2. The **area** of a plane figure is the amount of surface of the figure.

(i) Area of **square** = length × length

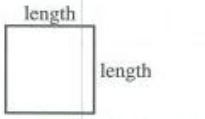
(ii) Area of **rectangle** = length × breadth

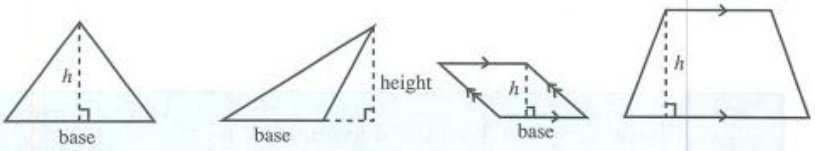


(iii) Area of **triangle** = $\frac{1}{2}$ × base × height

(iv) Area of **parallelogram** = base × height

(v) Area of **trapezium**
= $\frac{1}{2}$ × (sum of parallel sides) × height



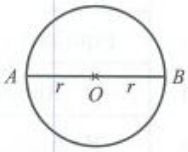


3. (a) **Parts of a circle**

(i) O is the **centre** of the circle.

(ii) r is the **radius** of the circle.

(iii) AB is the **diameter** of the circle and $AB = 2r$.



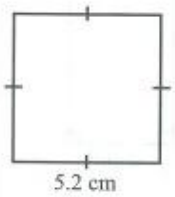
(b) **Formulae**

(i) **Circumference** of a circle $= 2\pi r$ $= \pi d$
(ii) **Area** of a circle $= \pi r^2$

Revision Exercise 11

1. Find the perimeter of each figure.

(a)



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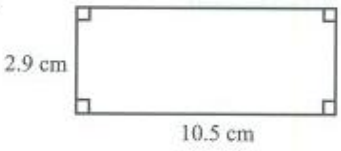

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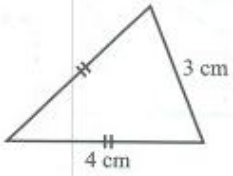

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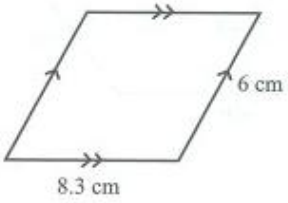

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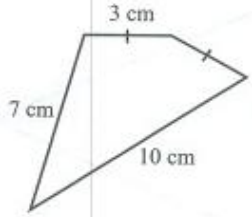

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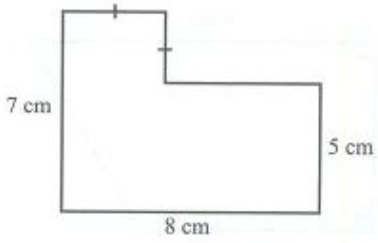

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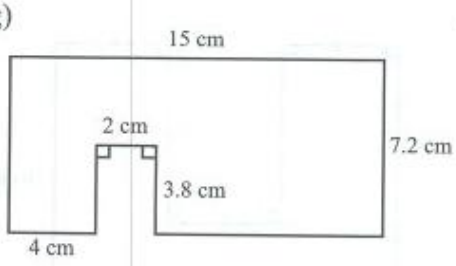

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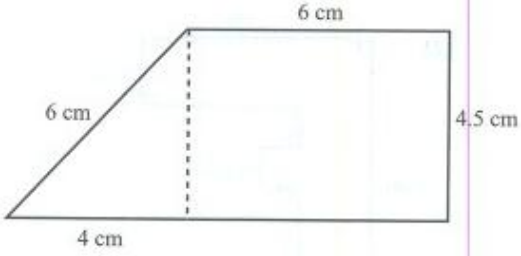
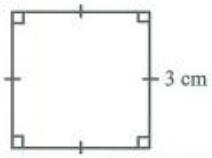


2. Find the area of each figure.

(a)



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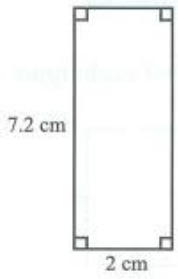

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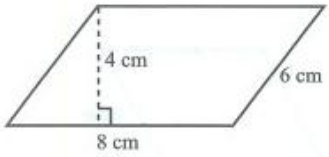

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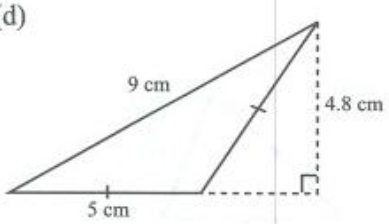

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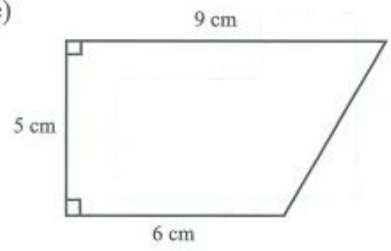

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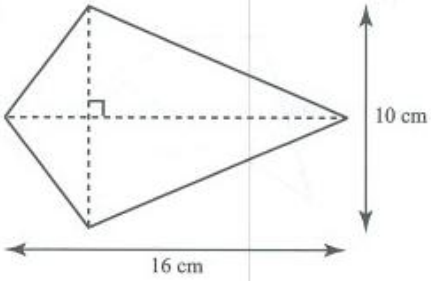

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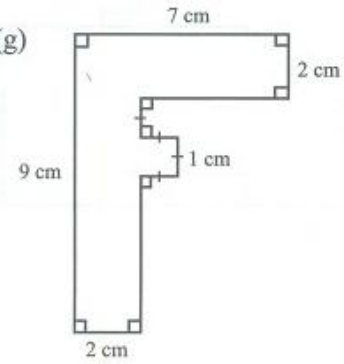

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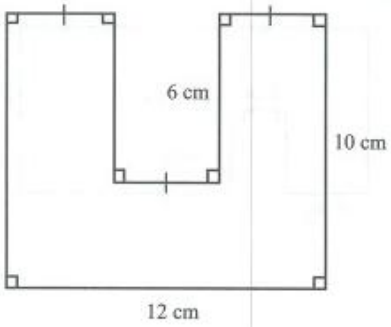


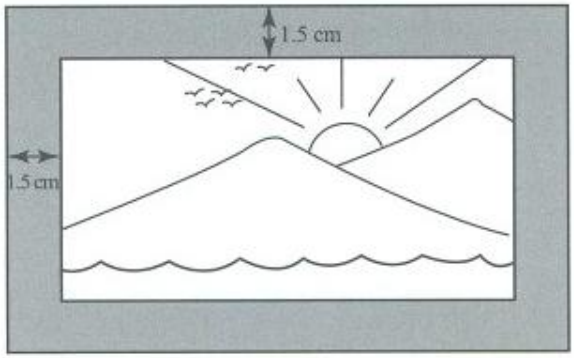
3. The perimeter of a parallelogram is 26 cm. If one of its sides is 5 cm, find the lengths of the other 3 sides.

4. A rectangular garden measures 14 m by 9 m.

   (a) Find its perimeter.

   (b) Calculate the total cost of fencing the garden at $11 per metre.

5. A rectangular picture is pasted on a piece of cardboard measuring 14 cm by 10 cm leaving a 1.5 cm border all around the picture. Find the length and breadth of the picture.



6. The perimeter of a square tile is 46 cm. Find

   (a) its length, and

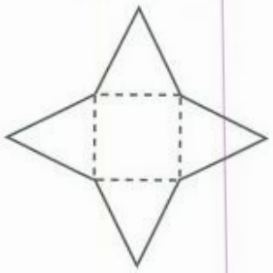
   (b) its area.

7. A rectangular field has a length of 80 m and a breadth of 50 m. Find

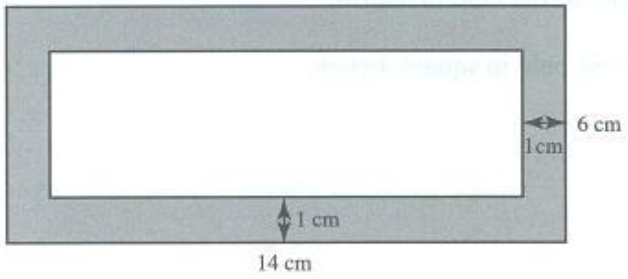
   (a) the perimeter of the field in metres,

   (b) the area of the field in square metres.

8. The figure consists of a square and four identical equilateral triangles. If the area of the square is 64 cm^2, find the perimeter of the entire figure.



9. Find the area of the shaded part.



10. The area of a rectangle is 45 000 cm^2. Find

(a) its area in square metres,

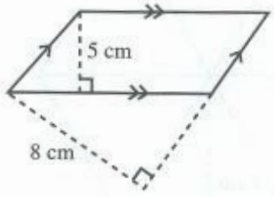
(b) the length of the rectangle, in metres, if its breadth is 120 cm.

11. Convert the following.

    (a) 2.05 m^2 to cm^2.

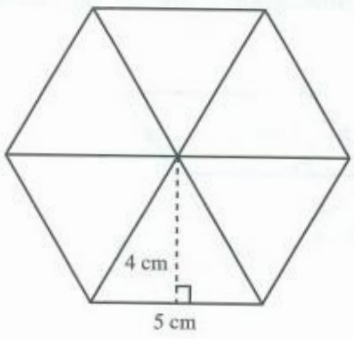
    (b) 0.55 ha to m^2 given that 1 hectare (ha) = 10 000 m^2.

12. Given that the area of the parallelogram is 60 cm^2, find its perimeter.



13. A trapezium has a height of 6 cm and an area of 45 cm². Find the sum of its parallel sides.

14. Find the area of the regular hexagon below.



15. The height of a triangle is 8 cm and its area is 26 cm^2. Find the length of its base.

16. Taking π to be $\frac{22}{7}$, find the circumference of a circle of

    (a) radius 21 cm, and

    (b) diameter 35 mm.

17. Taking π to be 3.14, find the area of a circle of

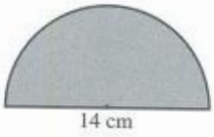
    (a) radius 10 cm, and

    (b) diameter 80 mm.

18. A wheel can cover a distance of 125.6 cm when it makes a full revolution. Find the radius of the wheel. (Take $\pi = 3.14$).

19. Find the area and perimeter of the shaded parts. (Take $\pi = \frac{22}{7}$).

(a)



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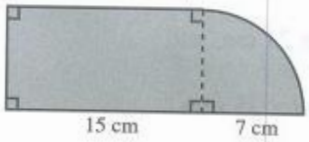

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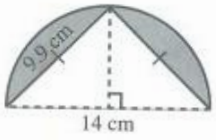

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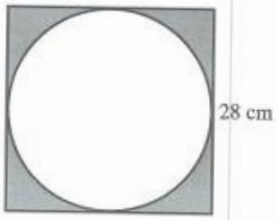

20. Given that the area of a semicircle is 453.73 cm^2, find

(a) its radius,

(b) its perimeter.

(Take $\pi = 3.14$).