MENSURATION

1. Rectangle:

(a) Area of a rectangle = length × breadth

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

(c) Diagonal of a rectangle
$$= \sqrt{(\text{length})^2 + (\text{Breadth})^2}$$

2. Square:

(a) Area of a square = (side)^2

(b) Perimeter of a square = 4 × side

(c) Diagonal of a square = $\sqrt{2}$ × side

3. Circle:

(a) Area of a circle = π × (radius)^2

(b) Circumference of a circle = 2π × (radius)

(c) Radius = $\dfrac{\text{Diameter}}{2}$ or
Diameter = 2 × Radius

4. Triangle:

(a) Area of a triangle $= \sqrt{s(s-a)(s-b)(s-c)}$

where $s = \dfrac{a+b+c}{2}$

(b) Area of a right angled triangle

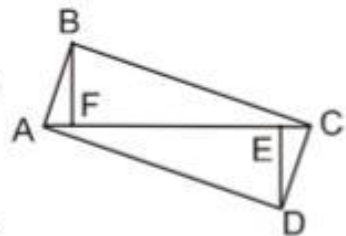$= \dfrac{1}{2} \times$ base (b) $\times$ height (h)

(c) Area of an equilateral triangle

$= \dfrac{\sqrt{3}}{4} \times$ (side)^2

5. Quadrilateral:

(a) Area of a quadrilateral $= \dfrac{1}{2} \times$ diagonal $\times$ sum of the offsets
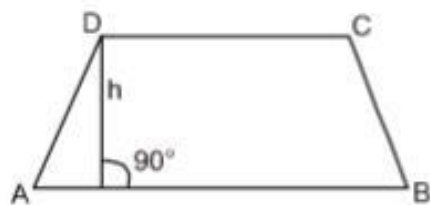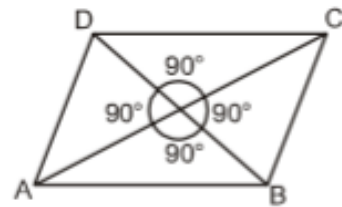Here AC = diagonal, BF and DE are offsets

(b) Area of a parallelogram =
Length of a side $\times$ corresponding altitude
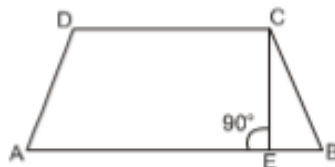Here AB = a side of the parallelogram ABCD and h = corresponding altitude

(c) Area of a rhombus $= \dfrac{1}{2} \times$ product of the diagonals

Here AC, BD = diagonals
and AB = BC = CD = DA

(d) Area of a trapezium

$= \dfrac{1}{2} \times$ (sum of the parallel sides) $\times$ distance between them

Here AB, CD = parallel sides, CE = distance between the parallel sides.

6. Four Walls:

(a) Area of the four walls (A) $= 2 \times h(l + b)$

(b) Height of the room $(h) = \dfrac{A}{2(l + b)}$

where $h =$ height of the room
$b =$ breadth of the room
$l =$ length of the room
$A =$ area of the four walls