

# Area of Trapeziums and Circles

## Key Vocabulary

Perpendicular Height—The height of a shape at right angle to the base

Compound Shapes— A shape made up of two or more shapes

Radius—From the centre of a circle to the edge

Diameter—The distance from one side of a circle to another that passes through the centre

Trapezium— A quadrilateral with only one pair of parallel sides

Perimeter—The distance around a shape. Adding every side together.

## Area of rectangles, triangles and Parallelograms

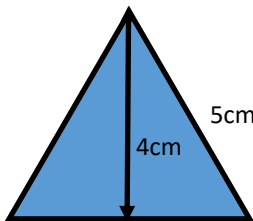


6cm

3cm

Base x Height

$$6 \times 3 = 18\text{cm}^2$$



6cm

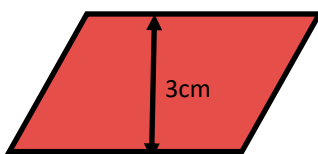
4cm

5cm

Base x Perpendicular Height

$$\frac{6 \times 4}{2} = 12\text{cm}^2$$

5cm is the slanted height, not the perpendicular height.



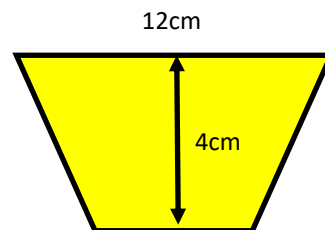
7cm

3cm

Base x Perpendicular Height

$$3 \times 7 = 21\text{cm}^2$$

## Area of a trapezium



12cm

4cm

3cm

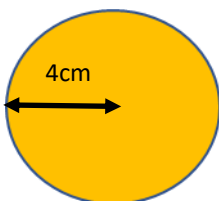
$$\frac{(a + b) \times \text{perpendicular height}}{2}$$

a and b are the parallel sides

$$\frac{(12 + 3) \times 4}{2}$$

$$\frac{15 \times 4}{2} = \frac{60}{2} = 30\text{cm}^2$$

## Area of a circle

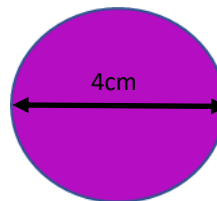


4cm

$$\pi \times \text{radius}^2$$

$$\pi \times 4^2$$

$$\pi \times 16 = 50.3\text{cm}^2 \text{ (1 d.p.)}$$



4cm

Here, we have the diameter and so we have to halve it first.

$$\pi \times 2^2$$

$$\pi \times 4 = 12.6\text{cm}^2 \text{ (1d.p.)}$$