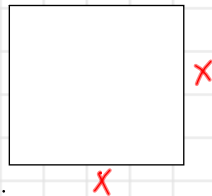


Chapter 6

# Area & Volume



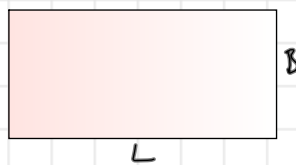
Square



$$P = 4x$$

$$A = x^2$$

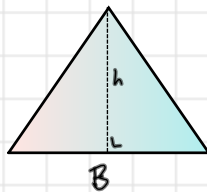
Rectangle



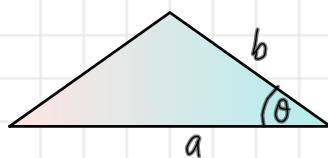
$$P = 2(L + B)$$

$$A = LB$$

Triangle



$$A = \frac{Bh}{2}$$



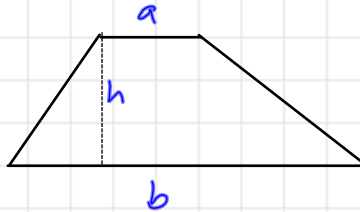
$$A = \frac{1}{2} ab \sin \theta$$

Parallelogram



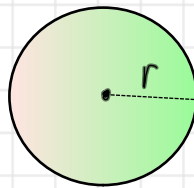
$$A = Bh$$

Trapezium



$$A = \frac{(a+b)h}{2}$$

Circle  
Disc



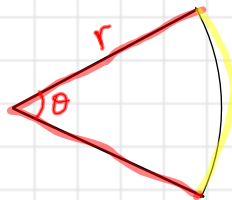
$$C = 2\pi r$$

$$A = \pi r^2$$

constant  
 $\pi \neq 2$

$$\pi? \approx 3.14 \approx \frac{22}{7} = \pi$$

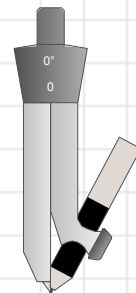
Sector



FRACTION?

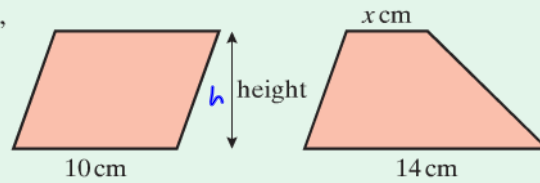
$$A = \left(\frac{\theta}{360^\circ}\right)\pi R^2$$

$$P = 2r + \left(\frac{\theta}{360^\circ}\right)2\pi r$$



**Example 1**

If a parallelogram has a base of 10 cm, and a trapezium of the same area and height has a base of 14 cm, find  $x$ , the length of the other parallel side of the trapezium.



Parallelogram

$$A = Bh$$

let height =  $h$

Trapezium

$$A = \frac{(a + b)h}{2}$$

Area Parallelogram = Area trapezium

$$\Rightarrow 10h = \frac{(x + 14)h}{2}$$

$$20 = x + 14$$

$$6 = x$$

**Polygons-have sides of equal length**

Polygons

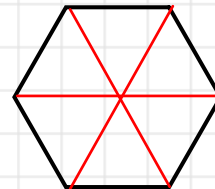
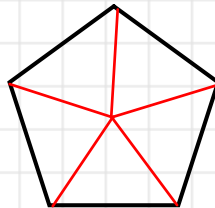
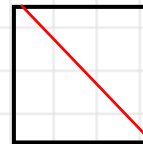
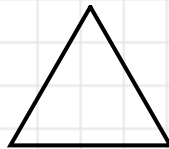
equilateral triangle

square

pentagon

hexagon

heptagon



Considering the area of similar triangles can help us work out the area of a polygon.