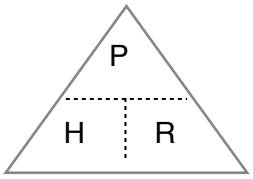
5 - Ratio and Proportion

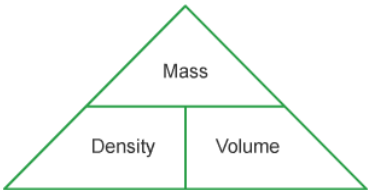
Ratio + Proportion
- Always simplify as low as possible
- Always convert to common units when working out
- Remove units in final answer

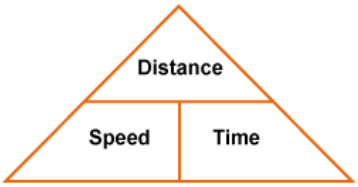
e.g. 500p : £15
common unit ⟶ £5 : £15
simplify ⟶ £1 : £3
final answer ⟶ 1 : 3

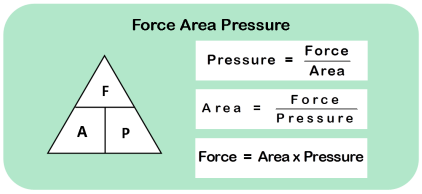
Compound Measures
Involves 3 variables
These can be connected by a triangle

e.g. Pay ⟶ hours worked × rate per hour
P = H × R
H = P/R
R = P/H









Speed	Distance	Time	Mass	Density	Volume	Pressure	Force	Area
mph	miles	minutes	g	g/cm³	cm³	Pa	N	m²
km/h	km/cm/m	hours	kg	kg/m³	m³			
m/s	yards	seconds						

Unit Changes
1m = 100 cm
1m² = 10,000cm (100 × 100)
1m³ = 1,000,000 cm³ (100 × 100 ×100)

Area
1cm² = 100mm²
1m² = 10,000 cm²
1km² = 1,000,000 m²

Volume
1cm³ = 1,000 mm³
1m³ = 1,000,000 cm³
1km³ = 10^9 m³

If you go down a unit you ×. If you go up you ÷.

cm³ ⟹ ×1000
1000 ÷ ⟸ **mm³**

m³ ⟹ ×1,000,000
1,000,000 ÷ ⟸ **cm³**

km³ ⟹ × 10^9
10^9 ÷ ⟸ **m³**