

Length, Area & Volume

Area of a triangle = $\frac{1}{2}bh$



Area of a parallelogram = bh



Area of a trapezium = $\frac{1}{2}(a+b)h$



Area of a circle = πr^2



Circumference of a Circle = $2\pi r$



Volume = Cross Sectional Area $\times$ Length

Arcs & Sectors



Arc Length = $\frac{x}{360} \times 2\pi r$



Sector Area = $\frac{x}{360} \times \pi r^2$

Recurring Decimals – Fractions

If $x = 0.444444$

$10x = 4.444444$

$9x = 4$

$x = \frac{4}{9}$

If $x = 0.54545$

$100x = 54.545454$

$99x = 54$

$x = \frac{54}{99}$

Trigonometry

SOH CAH TOA

$$\sin x = \frac{O}{H} \quad \cos x = \frac{A}{H} \quad \tan x = \frac{O}{A}$$

Compound Measures



D = Distance
S = Speed
T = Time



M = Mass
D = Density
V = Volume

Pythagoras

For right angled triangles ONLY



$$c^2 = a^2 + b^2$$

if finding the hypotenuse use ADD
if finding a shorter side SUBTRACT

Histograms

$$\text{Frequency Density} = \frac{\text{Frequency}}{\text{Class Width}}$$

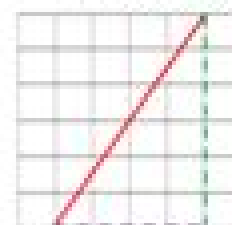
Equation of a Line

$$y = mx + c$$

m is the gradient, c is the y-intercept

Gradient of a Line

The gradient of a line is the slope
Gradient = change in y $\div$ change in x
(vertical $\div$ horizontal)



$$\text{Gradient} = \frac{4}{1} = 4 \div 1 = 4$$

Higher Revision Sheet

Fractions

Add/Subtract – MUST have the same denominator
Multiply – multiply numerators, multiply denominators
Divide – flip the second fraction, then multiply

Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$3x^2 + 4x - 2 = 0$$

$$a = 3$$

$$b = 4$$

$$c = -2$$

Enlargement

Always count FROM the centre of enlargement

Scale Factor 3 – increase the dimensions x3
Scale Factor $\frac{1}{4}$ – quarter the length of dimensions
Scale Factor -3 – increase the dimensions x3 and go in the opposite direction
Scale factor - $\frac{1}{4}$ – half the dimensions and go in the opposite direction

Venn Notation

u = union (or)

n = intersection (and)

Compound Interest

$$\text{amount} = \text{multiplier}^{\text{time period}}$$

Frequency

Cumulative – plot points at the END of the boundary
Polygon – plot points in the CENTRE of the boundary

Similarity

Similarity = Scale Factors!

Length scale factor = 2

Area scale factor = 2^2

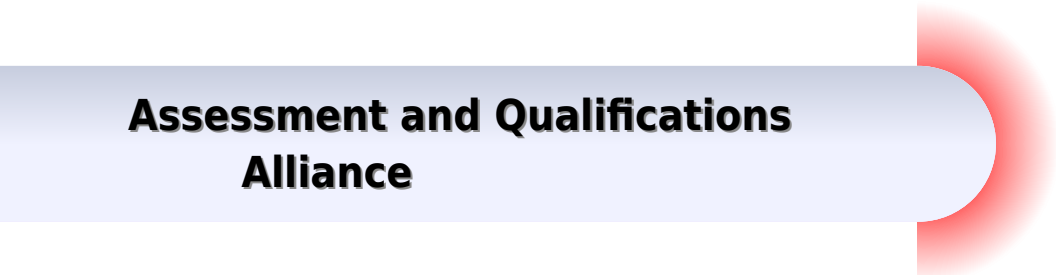
Volume scale factor = 2^3



- if the height of A = 4 and B = 6
length scale factor = 1.5
- if the surface area of A = 150cm^2 , B = 1350cm^2
surface area of B = $150 \times 1.5^2 = 2025\text{cm}^2$
- if the volume of B = 405cm^3 , A = 135cm^3
volume of A = $405 \div 1.5^3 = 135\text{cm}^3$

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