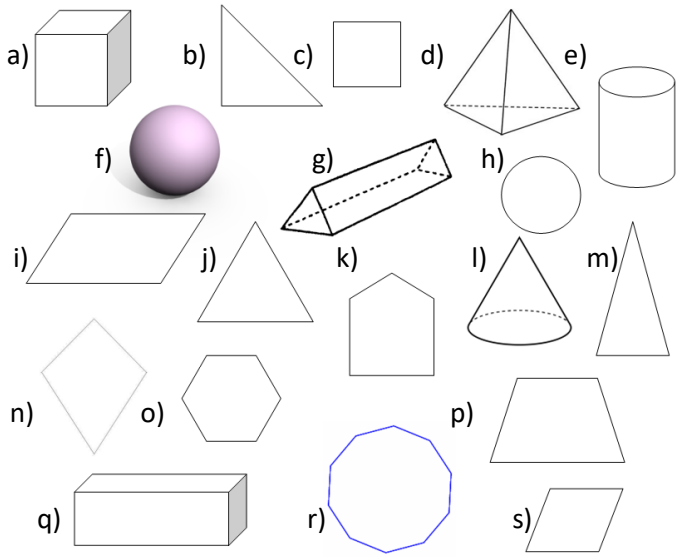
GCSE Foundation Test

Naming 2D and 3D shapes (spelling doesn't matter)



a) Cube
b) Right angled triangle
c) Square
d) Triangle based pyramid
e) Cylinder
f) Sphere
g) Triangular prism
h) Circle
i) Parallelogram
j) Equilateral triangle
k) Pentagon
l) Cone
m) Isosceles triangle
n) Kite
o) Hexagon
p) Trapezium
q) Cuboid
r) Decagon
s) Rhombus

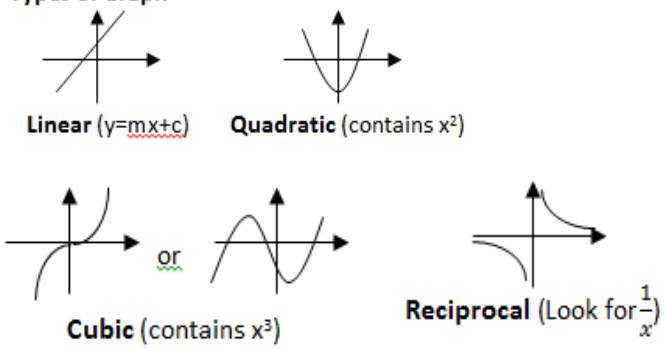
Equation of a straight line

$$y = mx + c$$

m represents the **gradient**

c represents the **y intercept**

Types of Graph



Linear (y=mx+c)

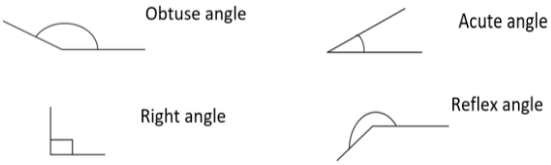
Quadratic (contains x^2)

or

Cubic (contains x^3)

Reciprocal (Look for $\frac{1}{x}$)

Names of Angles



Basic Angle Rules

Angles on a straight line add upto **180°**

Angles in a triangle add upto **180°**

Angles around a point add upto **360°**

Compound Growth & Decay

$$\mathbf{P\ x}\left(1 \pm \frac{r}{100}\right)^{n}$$

Where r is the rate of change
P is the principal amount,
n is the number of years

± means use + for growth/compound interest and use – for decay

Data

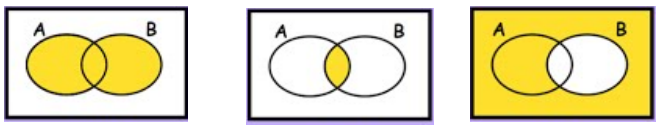
Frequency Polygons – plot the **midpoint** and the frequency/

Comparing datasets – comment on **an average (median or mean) and the spread (IQR or range).**

Percentage increase/decrease or Percentage profit

$$\%\ \text{increase/decrease} = \frac{\boldsymbol{new\ -\ original}}{\boldsymbol{origina}} \times \mathbf{100}$$

Venn diagrams

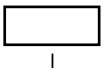


$A \cup B$ $A \cap B$ B'

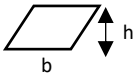
GCSE Foundation/Higher Formula Revision Sheet

Area (letter abbreviations will also be accepted e.g. l x w

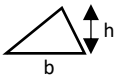
Area of a rectangle = **length x width**



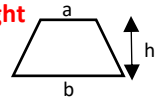
Area of a parallelogram = **base x perpendicular height**



Area of a triangle = **½ x base x perpendicular height**

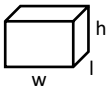


Area of a trapezium = **½ (a + b) x perp height**



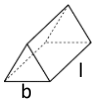
Volume

Volume of a cuboid = **length x width x height**



Volume of a prism = **area of cross-section x length**

Volume of a triangular prism = **½ x base x perpendicular height x length**



Volume of a pyramid = **1/3 x area of base x height**

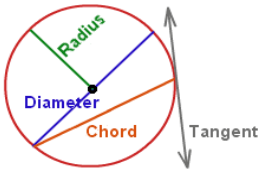
Circles

Circumference of a circle = $\pi \times$ **diameter**

Area of a circle = $\pi \times \text{radius}^2$

Volume of a cylinder = $\pi \times \text{radius}^2 \times$ **height**

Parts of a circle



Angles in polygons

Sum of interior angles = **(n – 2) x 180°**

(where n is the number of sides)

Exterior angles add upto **360°**

One exterior angle in a REGULAR polygon adds upto $\frac{360^o}{n}$

A pair of interior and exterior angles add upto **180°**

Interior angles in polygons

Interior angles of a triangle add upto	**180°**
Interior angles of a quadrilateral add upto	**360°**
Interior angles of a pentagon add upto	**540°**
Interior angles of a hexagon add uptp	**720°**
Interior angles of an octagon add upto	**1080°**

Constructing Pie Charts

Angle = $\frac{\text{frequency}}{\text{total}} \times 360^o$

Angles in parallel lines

(Z-angles) **Alternate** angles are **equal**

(F-angles) **Corresponding** angles are **equal**

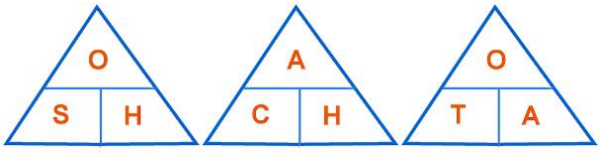
(C-angles) **Co-interior** angles add to **180**

Pythagoras & Trigonometry

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

Trigonometry

$sin(x) = \frac{opp}{hyp}$ $\quad cos(x) = \frac{adj}{hyp}$ $\quad tan(x) = \frac{opp}{adj}$



Compound Measures

$\text{speed} = \frac{\text{distance}}{\text{time}}$ $\quad \text{density} = \frac{\text{mass}}{\text{volume}}$