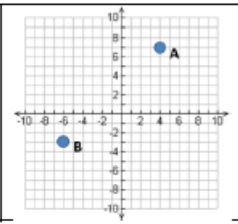
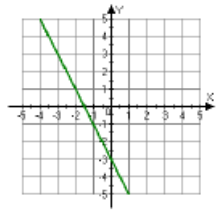
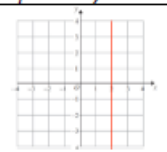
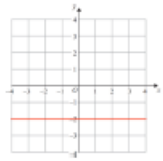
Maths *Knowledge Organiser*

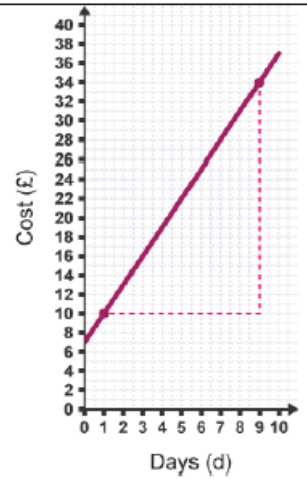
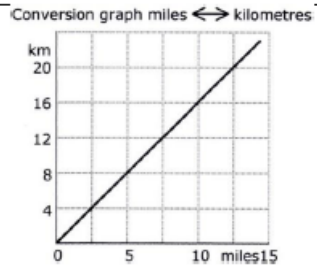
Coordinates

Coordinates	Written in **pairs**. The **first** term is the **x-coordinate** (movement **across**). The **second** term is the **y-coordinate** (movement **up or down**)	 A: (4,7) B: (-6,-3)

Linear Graphs

Linear Graph	**Straight line** graph. The **equation** of a linear graph can contain an **x-term**, a **y-term** and a **number**.	Example:  Other examples: $x = y$ $y = 4$ $x = -2$ $y = 2x - 7$ $y + x = 10$ $2y - 4x = 12$
Gradient and Intercept	***y = mx + c*** **Gradient (m)** is the steepness of the line. From a graph, find how many squares up/down the graph moves for every one square right. **Intercept (c)** = Where the line crosses the y-axis. Also called the **y-intercept**	 *Gradient = 3* *Intercept = -1* *Equation: y = 3x - 1*
Horizontal and Vertical lines	Line x =? is a **vertical line.** Line y =? is a **horizontal line.**	 *x = 2*  *y = -2*

Real Life Graphs

Real Life Graphs	Graphs that are supposed to model some real-life situation. The actual meaning of the values depends on the labels and units on each axis. The **gradient** might have a contextual meaning. The **y-intercept** might have a contextual meaning. The **area** under the graph might have a contextual meaning.	 A graph showing the cost of hiring a ladder for various numbers of days. The gradient shows the cost per day. It costs £3/day to hire the ladder. The y-intercept shows the additional cost/deposit/fixed charge (something not linked to how long the ladder is hired for). The additional cost is £7.
Conversion Graph	A line graph to **convert one unit to another.** Can be used to convert units (eg. miles and kilometres) or currencies ($ and £) Find the value you know on one axis, read up/across to the conversion line and read the equivalent value from the other axis.	 $8\ km = 5\ miles$