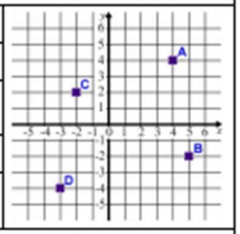
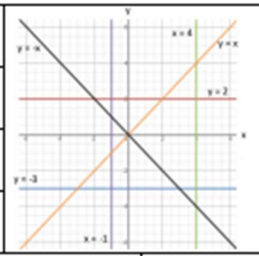
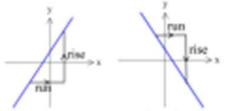
GCSE Mathematics
Algebra 2 - Graphs

DEFINITIONS			
1	**Axis**	A reference line on a graph	
2	**Axes**	Plural of axis	
3	**Quadrant**	A quarter of a graph separated by axes	
4	**Origin**	The point (0, 0) on a set of axes	
5	**Coordinates**	Used to show a position on a coordinate plane	
		The first coordinate is the horizontal position (x axis), the second is the vertical position (y axis)	
6	**Parallel**		Equal distance apart If lines are extended, they will never meet.
7	**'y =' graph**	Constant y co-ordinate	
		Will be parallel to the x-axis	
8	**'x =' graph**	Constant x co-ordinate	
		Will be parallel to the y-axis	
9	**y-intercept**	The y value where a graph crossed the y – axis.	where x = 0
10	**x-intercept**	The x value(s) where a graph crosses the x-axis.	where y = 0
11		A symbol on an axis to show that the axis has not started at zero	
12	**Trajectory**	The path an object follows	
13	**Asymptote**	A line that a graph will get very close to but never touch	
14	**Direct proportion**	- the graph is a straight line - that goes though the origin - if one variable is multiplied by n, so is the other	A is in direct B and C are not

15	**Gradient**	The steepness of a graph	
16	**Line segment**	A part of a line, has a start point, and an end point	
17	**Labelling a graph**	Means write the equation next to the line	
18	**Coefficient**	Number in front of a variable	
19	**Linear Equation**	Produces a straight line graph	
20	**Steady speed**	Means travelling the same distance each minute	
21	**Velocity**	Means speed in a particular direction	
22	**Rate of Change**	Shows how a variable changes over time	
23	**Sketch**	An approximate drawing of a graph using key points: roots, y-intercept, turning point	
24	**Iterative process**	A repeated process that can be used to find an accurate root of a quadratic or cubic equation	
STRAIGHT LINE GRAPHS			
25	**Linear Equation**	A linear equation contains an x term but no higher power of x.	eg $y = 3x - 1$ $2x + 3y = 8$
26	**y = mx + c**	The general equation of a straight line	m is the gradient c is the y-intercept
27	**Gradient**	$Gradient = \frac{change\ in\ y}{change\ in\ x} = \frac{rise}{run}$	 This has a positive gradient This has a negative gradient
28		Positive gradients, line goes from bottom left to top right	
29		Negative gradients, line goes from top left to bottom right	
30	**Gradient between 2 points**	If A = (x_1, y_1) and B = (x_2, y_2) The gradient of line AB = $\frac{y_2 - y_1}{x_2 - x_1}$	
31	**Parallel lines**	Parallel lines have the same gradient	
32	**Perpendicular lines**	When lines are perpendicular the product of the gradients is – 1	
		If one graph has gradient m, then a perpendicular graph has gradient $-\frac{1}{m}$	
33	**Mid-point**	The mid-point is the coordinate half between two points.	If A = (x_1, y_1) and B = (x_2, y_2) the mid-point is $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$