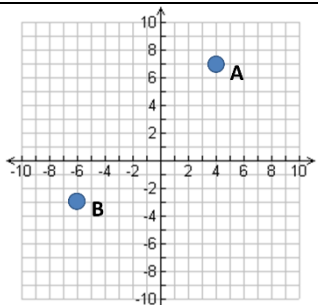
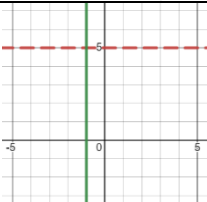
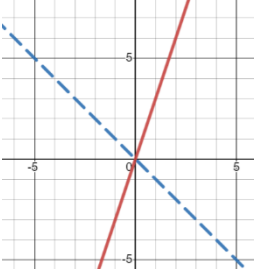
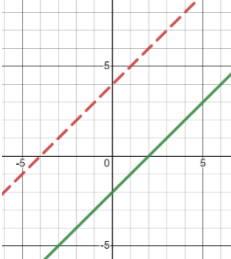
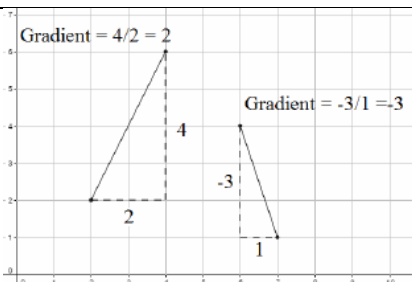


Topic: Coordinates and Graphs Year 7

Topic/Skill	Definition/Tips	Example																
Coordinates	Written in pairs (x, y). The first term is the x-coordinate (movement across). The second term is the y-coordinate (movement up or down). The origin is the coordinate (0, 0).	 A: (4, 7) B: (-6, -3)																
Horizontal and vertical lines	Horizontal lines have equations of the form $y = a$ Vertical lines have equations of the form $x = a$	 These lines have the equation $y = 5$ (dashed line) and $x = -1$ (solid line).																
Lines of the form $y = kx$	These lines go through the origin. If k is positive they will slope 'uphill' from left to right. If k is negative they will slope 'downhill' from left to right.	 These graphs have equations $y = -x$ (dashed line) and $y = 3x$ (solid line).																
Lines of the form $y = x + a$	These lines cross the y axis at (0, a). They have a gradient of 1. For every one unit you go across you go one unit up.	 These graphs have equations $y = x + 4$ (dashed line) and $y = x - 2$ (solid line).																
Plotting Linear Graphs	Table of Values Construct a table of values to calculate coordinates.	<table><tr><td>x</td><td>-3</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>y = x + 3</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr></table> Coordinates to plot are (-3, 0), (-2, 1), (-1, 2), (0, 3), (1, 4), (2, 5), (3, 6).	x	-3	-2	-1	0	1	2	3	y = x + 3	0	1	2	3	4	5	6
x	-3	-2	-1	0	1	2	3											
y = x + 3	0	1	2	3	4	5	6											
Gradient	The gradient of a line is how steep it is. The gradient can be positive (sloping upwards) or negative (sloping downwards). The gradient of a horizontal line is zero. The gradient of a vertical line is undefined.	 Gradient = $4/2 = 2$ Gradient = $-3/1 = -3$																

Where else is the Coordinates and graphs topic used in maths?

Transformations

Angles

Algebra

Data handling

Ratio and proportion

Links to other subjects