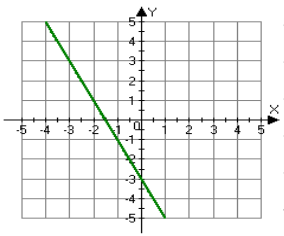
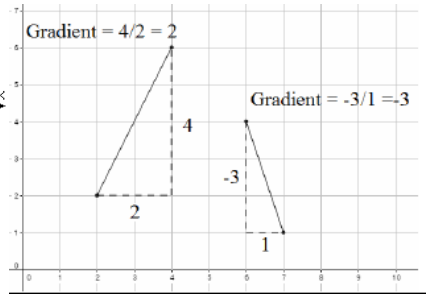
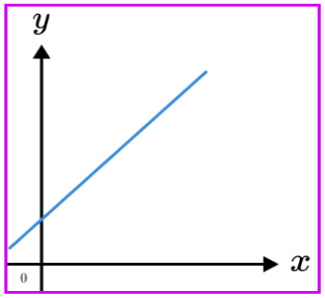
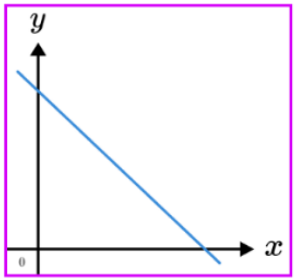
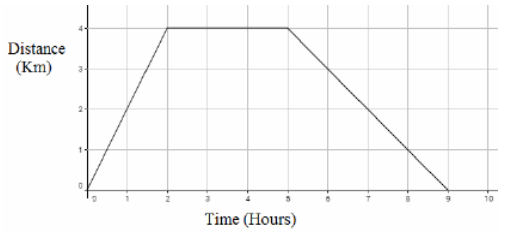
Knowledge Organiser - Mathematics Linear graphs, Speed and rates, Distance-time graphs

	Topic	Information	Examples	Sparx clip
1	Equations of linear graphs	**Straight line** graph. The general equation of a linear graph is $y = mx + c$ where m **is the gradient** and c **is the y-intercept.** The gradient of a line is how **steep** it is. **Gradient =** $\frac{Change\ in\ y}{Change\ in\ x} = \frac{Rise}{Run}$ The gradient can be positive (sloping upwards) or negative (sloping downwards).	 $y = -2x - 3$ 	U789, M797, U741, U315, U669.
2	Speed and rates	**Speed = distance ÷ time** The **rate of change** is what degree one variable changes in relation to another.	If a car travels 66 km in 1.5 hours, then we can use this formula to calculate the speed. Speed= distance ÷ time= 66÷1.5= 44km/h Positive rate of change When two variables both increase in relation to ea Example shown by the graph below.  Negative rate of change When one variable increases the other decreases Example shown by the graph below. 	U585, U144, U325, U505, U556, U902, U151, U256, U388.
3	Distance-time graphs.	You can find the **speed** from the **gradient** of the line (Distance ÷ Time) The steeper the line, the quicker the speed. A **horizontal** line means the object is not moving (**stationary**).		U151, U315, U403, U914, U462, U966