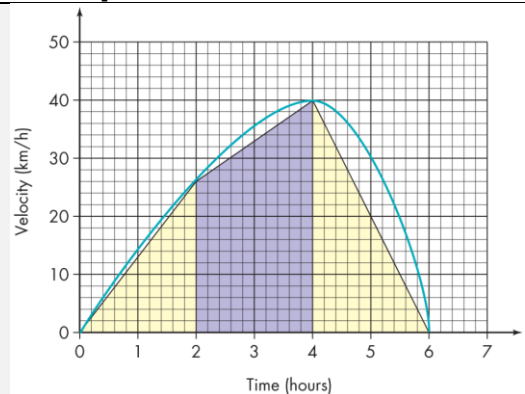
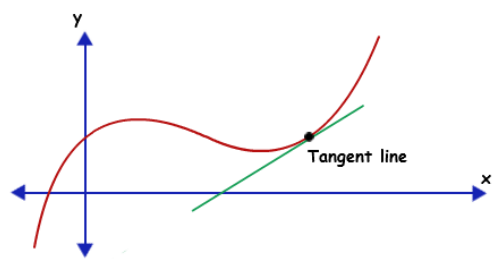
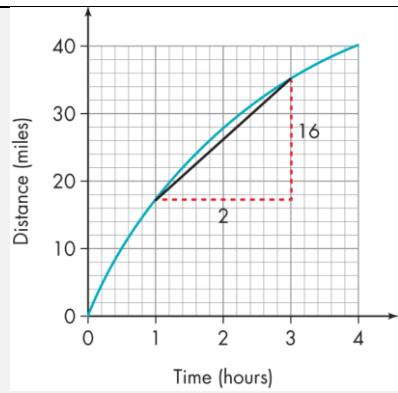
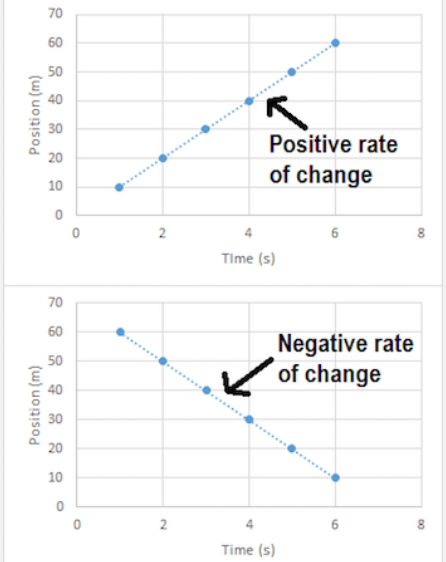
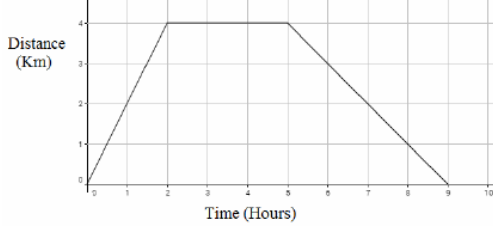
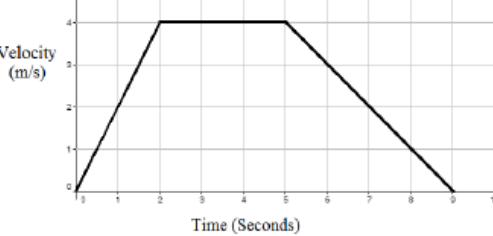


Topic: Area Under Graph and Gradient of Curve

Topic/Skill	Definition/Tips	Example
1. Area Under a Curve	To find the area under a curve, split it up into simpler shapes – such as rectangles, triangles and trapeziums – that approximate the area.	
2. Tangent to a Curve	A straight line that touches a curve at exactly one point .	
3. Gradient of a Curve	<p>The gradient of a curve at a point is the same as the gradient of the tangent at that point.</p> <ol style="list-style-type: none"> 1. Draw a tangent carefully at the point. 2. Make a right-angled triangle. 3. Use the measurements on the axes to calculate the rise and run (change in y and change in x) 4. Calculate the gradient. 	 $\text{Gradient} = \frac{\text{Change in } y}{\text{Change in } x}$ $= \frac{16}{2} = 8$



4. Rate of Change	<p>The rate of change at a particular instant in time is represented by the gradient of the tangent to the curve at that point.</p>	 <p>The top graph shows Position (m) on the y-axis (0 to 70) and Time (s) on the x-axis (0 to 8). A line passes through points (1, 10), (2, 20), (3, 30), (4, 40), (5, 50), and (6, 60). An arrow points to the line with the text 'Positive rate of change'.</p> <p>The bottom graph shows Position (m) on the y-axis (0 to 70) and Time (s) on the x-axis (0 to 8). A line passes through points (1, 60), (2, 50), (3, 40), (4, 30), (5, 20), and (6, 10). An arrow points to the line with the text 'Negative rate of change'.</p>
5. Distance-Time Graphs	<p>You can find the speed from the gradient of the line ($\text{Distance} \div \text{Time}$)</p> <p>The steeper the line, the quicker the speed.</p> <p>A horizontal line means the object is not moving (stationary).</p>	 <p>The graph shows Distance (Km) on the y-axis (0 to 4) and Time (Hours) on the x-axis (0 to 10). The line starts at (0,0), goes up to (2,4), stays horizontal until t=5, and then goes down to (9,0).</p>
6. Velocity-Time Graphs	<p>You can find the acceleration from the gradient of the line ($\text{Change in Velocity} \div \text{Time}$)</p> <p>The steeper the line, the quicker the acceleration.</p> <p>A horizontal line represents no acceleration, meaning a constant velocity.</p> <p>The area under the graph is the distance.</p>	 <p>The graph shows Velocity (m/s) on the y-axis (0 to 4) and Time (Seconds) on the x-axis (0 to 10). The line starts at (0,0), goes up to (2,4), stays horizontal until t=5, and then goes down to (9,0).</p>

