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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Area Under Graph and Gradient of Curve**  |
| 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**. | Image result for tangent to a curve |
| 3. Gradient of a Curve | The **gradient of a curve** at a point is the same as the **gradient of the tangent** at that point.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. | $$Gradient=\frac{Change in y}{Change in x}$$$$=\frac{16}{2}=8$$ |
| 4. Rate of Change | The rate of change at a particular instant in time is represented by the **gradient of the tangent to the curve** at that point. | Image result for positive negative rate of change |
| 5. 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**). |  |
| 6. Velocity-Time Graphs | You can find the **acceleration** from the **gradient** of the line (Change in Velocity ÷ Time)The steeper the line, the quicker the acceleration.A **horizontal line** represents no acceleration, meaning a **constant velocity**.The **area** under the graph is the **distance.** |  |

**Knowledge Organiser**