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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. |  |
| 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**