



NAME:

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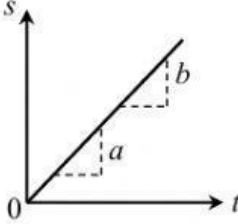
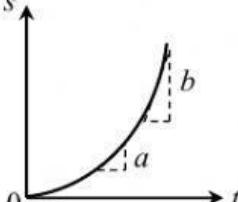
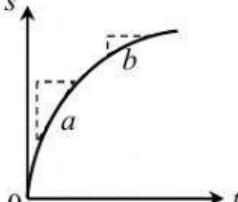
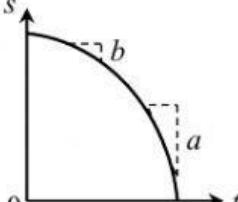
CHAPTER 2: KINEMATICS OF LINEAR MOTION

1. Connect the dots to sketch the graph of $v-t$ and $a-t$ for an object in linear motion.

No.	Graph of $s-t$	Graph of $v-t$	Graph of $a-t$
(a)			
(b)			
(c)			
(d)			

2. Linear Motion Graph Analysis

Choose a **suitable word** to complete the sentences in the table below.

No.	Graph of s - t	Graph Analysis
(a)		<p>Gradient of s - t graph represents velocity.</p> <p>Gradient of s - t graph is constant / increasing / decreasing from a to b.</p> <p>Hence, the velocity is constant / increasing / decreasing from a to b.</p> <p>The value of acceleration is _____.</p>
(b)		<p>Gradient of s - t graph is positive / negative and the value is constant / increasing / decreasing from a to b.</p> <p>Hence, the velocity is constant / increasing / decreasing.</p> <p>The object is accelerating / decelerating.</p>
(c)		<p>Gradient of s - t graph is positive / negative and the value is constant / increasing / decreasing from a to b.</p> <p>Hence, the velocity is constant / increasing / decreasing.</p> <p>The object is accelerating / decelerating.</p>
(d)		<p>Gradient of s - t graph is positive / negative and the value is constant / increasing / decreasing from a to b.</p> <p>Hence, the velocity is constant / increasing / decreasing.</p> <p>The object is accelerating / decelerating.</p>

3. **Free fall motion** is a vertical motion of a body under the influence of force only.

4. Choose the correct answer from the dropdown

Cases	Analysis
Case 1	<p>An object is released from point A.</p> <p>$u =$</p>
	<p>Displacement of the object from initial position to the ground.</p> <p>$s = -150 \text{ m}$</p>
	<p>Velocity of the object when it reaches point B.</p> <p>$v_B =$</p>
	<p>Velocity of the object when it reaches point C.</p> <p>$v_C = -15 \text{ m s}^{-1}$</p>
Case 2	<p>Object is thrown vertically upward.</p> <p>$u =$</p>
	<p>Displacement of the object from initial position to the ground.</p> <p>$s =$</p>
	<p>Velocity of the object when it reaches the maximum height.</p> <p>$v =$</p>
	<p>Velocity of the object when at point A.</p> <p>$v_A =$</p>

5. A marble is **thrown** vertically **downward** at 5 m s^{-1} from a height of 15 m. Calculate the

(a) speed of the object just before it hits the ground.

$$v_y^2 = u_y^2 - 2gs_y$$

$$v_y^2 = (\quad) - 2g(\quad)$$

$$v_y^2 = \quad \text{m}^2 \text{ s}^{-2}$$

$$v_y = \pm \quad \text{m s}^{-1}$$

$$v_y = \quad \text{m s}^{-1}$$

(b) time taken by the object to reach the ground.

$$s_y = u_y t - \frac{1}{2} g t^2$$

$$\quad = \quad t - \frac{1}{2} (\quad) t^2$$

$$\quad = \quad t - (\quad) t^2$$

$$\quad t^2 + \quad t - \quad = 0$$

$$t = \quad$$