

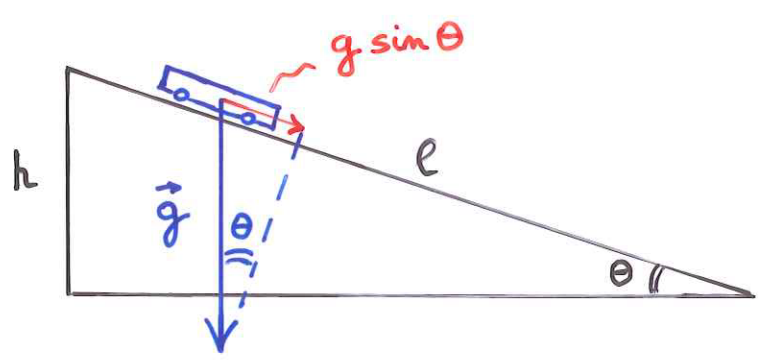
FREE FALL

* CONST. ACCELERATION

$$x = x_0 + v_0 t + \frac{1}{2} a t^2 \quad \Rightarrow \quad \underline{x = \frac{1}{2} a t^2}$$

$$v = v_0 + a t$$

PART I INCLINED PLANE



$$a = g \sin \theta$$

$$g = 9.8 \frac{m}{s^2}$$

Ia) SET $\theta = 0.01$ rad ...

GRAPH x vs. t
GRAPH x vs. t^2

Ib) SET $\theta = 0.05$ rad ...

NO GRAPHS

Ic) SAME AS Ib, BUT ADD 1 kg

$$a = \frac{2x}{t^2} \rightarrow \blacksquare$$

(HOW TO SET θ ? FOR SMALL ANGLES $\theta \approx \sin \theta \approx \tan \theta$ IN RADIANS)

PART II FREE FALL

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- $a = g$...
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GRAPH x vs. t
GRAPH x vs. t^2