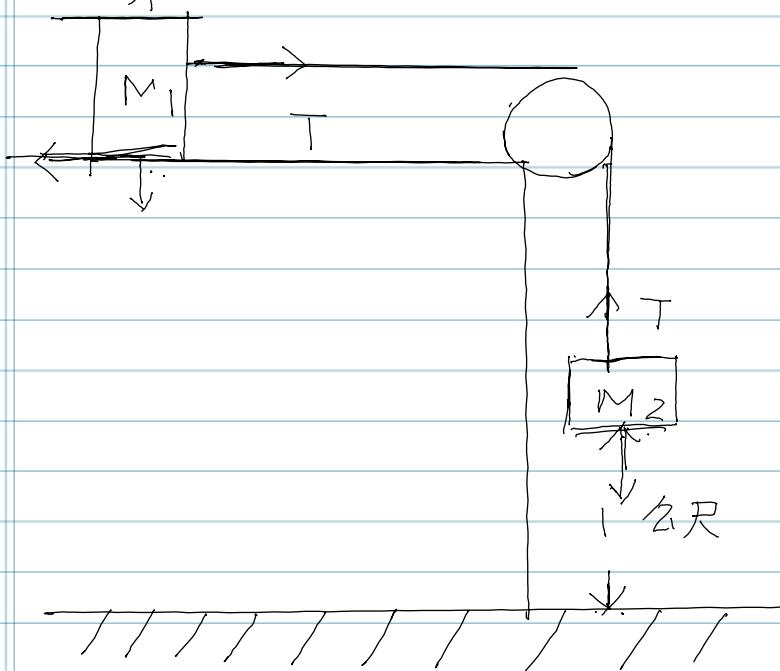


圖 中  $M_1$  與桌面之動摩擦係數為 0.4。

$M_1 = 1 \text{ kg}$ ,  $M_2 = 0.5 \text{ kg}$ , 若不計滑輪之質量及摩擦力, 試求懸掛之木塊到達地面需多久的時間?



$$M_2 g - T = M_2 a \quad (1)$$

$$T - f_K = M_1 a \quad (2)$$

$$(1) + (2) \Rightarrow M_2 g - f_K = (M_1 + M_2) a \quad (3)$$

$$f_K = \mu_K N = \mu_K (M_1 g)$$

$$M_2 g - \mu_K (M_1 g) = (M_1 + M_2) a$$

$$a = \frac{(M_2 - \mu_K M_1) g}{(M_1 + M_2)} = \frac{(0.5 - 0.4 \times 1) g}{(1 + 0.5)}$$

$$= 0.65 \frac{\text{公尺}}{\text{秒}^2} \quad s = v_0 t + \frac{1}{2} a t^2$$

$$s = \frac{1}{2} \times 0.65 \times t^2 \quad t = \sqrt{\frac{2}{0.65}} = 1.8 \text{ 秒}$$