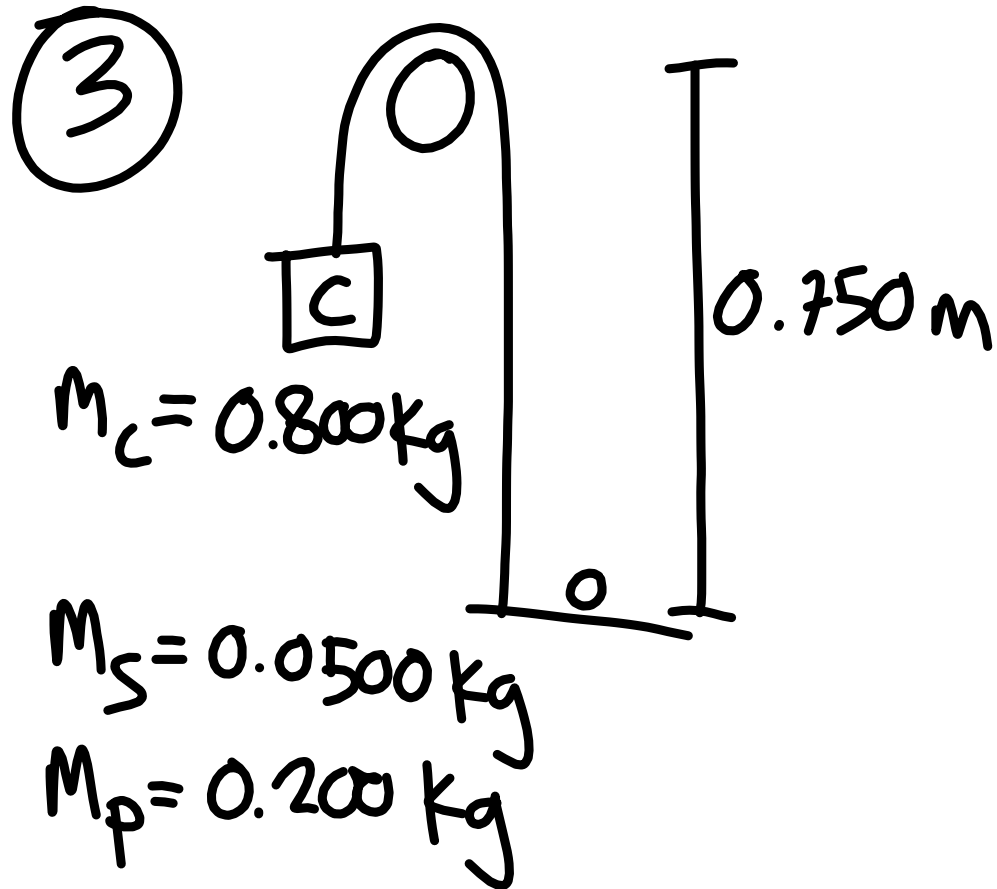




$$a = \frac{g(m_1 - m_2)}{m_1 + m_2}$$

$$a = \frac{(9.8)(.550)}{1.050}$$

$$a = 5.14 \frac{\text{m}}{\text{s}^2}$$

$$V_f^2 = \cancel{v_i^2} + 2ad$$

$$V_f^2 = 2ad$$

$$V_f = \sqrt{2ad}$$

$$V_f = \sqrt{2(5.14)(0.75)}$$

$$V_f = \sqrt{7.71} = 2.78 \frac{\text{m}}{\text{s}}$$

$$b) \cancel{v_f}^{2.70} = v_i^2 + 2ad$$

$$0 = v_i^2 + 2ad$$

$$\frac{-v_i^2}{2a} = d$$

$$\frac{-(2.78)^2}{2(-9.81)} = d$$

$$d = 0.394 \text{ m}$$

c)

① $v_f = v_i + at$

$\frac{2.78}{5.14} = t$

$t = 0.540 \text{ s}$

② $v_f = v_i + at$

$\frac{-v_i}{a} = t$

$\frac{-2.78}{-9.81} = 0.283 \text{ s}$

$$\textcircled{3} \quad d_+ = 0.393 + 0.75 = 1.143 \text{ m}$$

$$\textcircled{4} \quad d = v_i t + \frac{1}{2} a t^2$$

$$-1.143 = -4.905 t^2$$

$$t = 0.482 \text{ s}$$

$$\textcircled{1.31 \text{ s}}$$

