

Osciladorea

3 kg-ko gorputz bat erortzen utziko dugu irudiaren gainazal kurbatutik eta marruskadurarik gabekoa. Gero $k = 400 \text{ N/m}$ konstante elastikoko malguki bat aurkituko du.

- Zenbat konprimituko da malgukia?
- Zer gertatuko da malgukia konprimitu ondoren?

(Oharra: hasi aurretik 13. ariketa erreparasatu)

Datuak

$$m = 3 \text{ kg}$$

$$k = 400 \text{ N/m}$$

?

Galdera

$$x_f = ?$$

Diagrama



$$\textcircled{1} \quad y_i = 5 \text{ m}$$
$$v_i = 0$$

$$\textcircled{2} \quad y_f = 0 \text{ m}$$
$$v_f = 0 \text{ m}$$
$$x_f = ?$$

Ebazpena

$$\textcircled{1} \quad E_i = E_{ci} + E_{pi} = mgy_i$$

$$\textcircled{2} \quad E_f = E_{cf} + E_{pf} = 0 + \frac{1}{2} k x_f^2$$

$$\left. \begin{array}{l} \textcircled{1} \\ \textcircled{2} \end{array} \right\} E_i = E_f \Rightarrow mgy_i = \frac{1}{2} k x_f^2$$

$$x_f = \left(\frac{2mgy_i}{k} \right)^{1/2} = \underline{\underline{0.858 \text{ m}}}$$

$$E_p = \frac{1}{2} k x^2$$

$$F = -kx$$