

M.S. 1.11

GIVEN: Mass = 5 kg
spring deflection is 8.0 cm
 $g = 9.81 \text{ m/s}^2$

FIND: Spring constant k
in N/cm

$$F = kx$$

↑
"proportionality constant" or "spring constant"

$$k = \frac{F}{x} \left(\frac{\text{N}}{\text{cm}} \right)$$

$$F = W = mg = (5 \text{ kg})(9.81 \text{ m/s}^2) = 49.05 \text{ N}$$

$$k = \frac{49.05 \text{ N}}{8.0 \text{ cm}} = \underline{6.13 \text{ N/cm}} \leftarrow \underline{\text{ANS.}}$$

