

$$a) \quad m = 150 \text{ g} = .150 \text{ kg}$$

$$x = 3.5 \text{ cm} = .035 \text{ m}$$

$$F = -k \cdot x$$

$$(.150 \text{ kg})(9.8 \text{ m/s}^2) = -k \cdot (-.035 \text{ m})$$

$$\boxed{k = 42 \text{ N/m}}$$

$$b) \quad k = 42 \text{ N/m}$$

$$x = 4.2 \text{ cm} = .042 \text{ m}$$

$$F = -k \cdot x$$

$$F = -(42 \text{ N/m})(-.042 \text{ m})$$

$$\boxed{F = 1.8 \text{ N}}$$