

Pg 418: 1a, 5

Pg 418: 1b) $\vec{F} = -kx$

$$\vec{F} = (60 \text{ N/m}) \cdot 1.5 \text{ m} = 24 \text{ N}$$

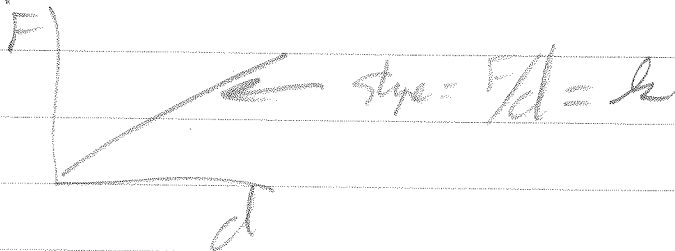
b) $\vec{a} = \frac{\Sigma \vec{F}}{m} = \frac{24 \text{ N}}{.40 \text{ kg}} = 60 \text{ m/s}^2$

2) a) Find spring constant for first part

$$\vec{F}_s = -kx \rightarrow k = \frac{F_s}{x} = \frac{50 \text{ N}}{.05 \text{ m}} = 1000 \text{ N/m}$$

↳ $\vec{F}_s = (1000 \text{ N/m})(.11 \text{ m}) = 110 \text{ N}$

b) graph would be a straight line



5) $80.0 \text{ N} = (40.0 \text{ N/cm} \cdot X) + (25.0 \text{ N/cm} \cdot X)$

↳ $80.0 \text{ N} = 65.0 \text{ N/cm} \cdot X$

$X = 1.23 \text{ cm}$