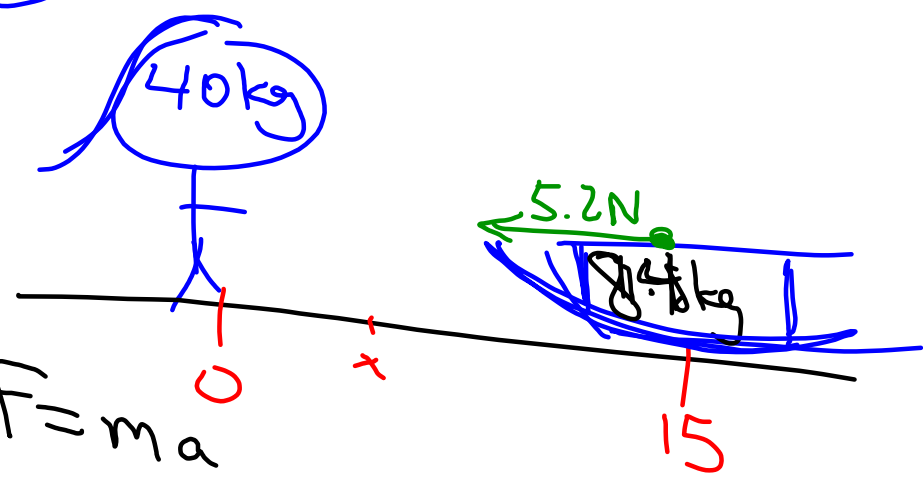


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$$F = ma$$

$$5.2\text{ N} = (8.4\text{ kg}) a \Rightarrow a_{\text{sled}} = -0.619 \frac{\text{m}}{\text{s}^2}$$

$$5.2\text{ N} = (40\text{ kg}) a_{\text{girl}} \Rightarrow a_{\text{girl}} =$$

$$x = x_0 + v_0 t + \frac{1}{2} a_{\text{girl}} t^2$$

$$x = 15 + \frac{1}{2} a_{\text{sled}} t^2 \Rightarrow t^2 = \frac{2(x-15)}{a_{\text{sled}}}$$

$$x = \frac{\frac{1}{2} a_{\text{girl}}}{a_{\text{sled}}} (2(x-15))$$