Problem 4.2

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We know that:

$$F = ma$$

We also know that:

$$\begin{aligned} a &= \frac{v_2 - v_1}{t} \\ &= \frac{(10\ \text{m/s}) - 0}{(.2\ \text{s})} \\ &= 50\ \text{m/s}^2 \end{aligned}$$

So that:

$$\begin{aligned} F &= ma \\ &= (.5\ \text{kg})(50\ \text{m/s}^2) \\ &= 25\ \text{nts.} \end{aligned}$$