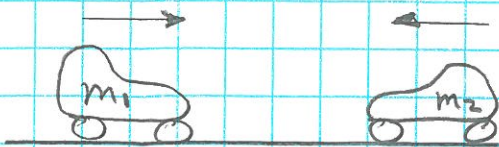


Initial

$$v = 80 \text{ km/h} = v$$



Final

$$\frac{19-19}{1}$$



for either car:

$$KE = Q$$

$$\frac{1}{2} m_1 v^2 = m_1 c \Delta T$$

$$\Delta T = \frac{v^2}{2c}$$

where  $v = 80 \frac{\text{km}}{\text{h}} \left( \frac{1 \text{ h}}{3600 \text{ s}} \right) \left( \frac{1000 \text{ m}}{1 \text{ km}} \right) = 22.22 \text{ m/s}$

$$c = 449 \frac{\text{J}}{\text{kg K}} \quad (\text{Iron})$$

So:

$$\Delta T = 0.5498 \text{ K (or } ^\circ\text{C)}$$