Answer on Question #72530-Physics-Other

A car initially moves along a straight road at 50 km/hr, and then turns around to travel at 80 km/hr in the opposite direction. What is the car's change of velocity?

Solution

The initial velocity is

$$v_i = -50\frac{\text{km}}{\text{hr}}.$$

We can choose positive and negative direction as we need. I cannot see why initial velocity should be positive according to given scenario.

The final velocity is

$$v_f = 80\frac{\text{km}}{\text{hr}}.$$

The car's change of velocity is

$$\Delta v = v_f - v_i = 80\frac{\text{km}}{\text{hr}} - \left(-50\frac{\text{km}}{\text{hr}}\right) = 130\frac{\text{km}}{\text{hr}}$$

Answer: $130\frac{\text{km}}{\text{hr}}$.