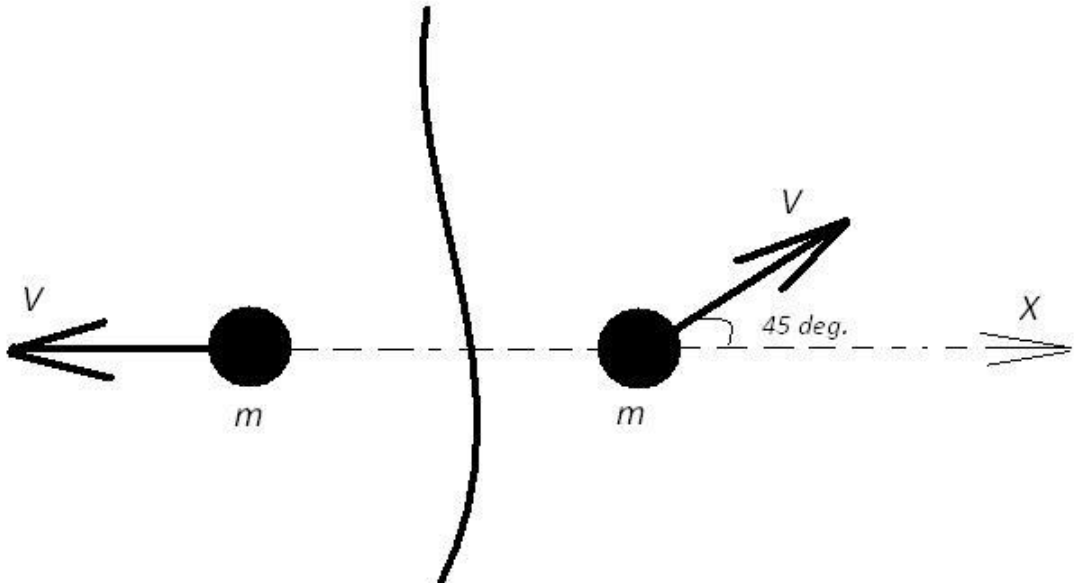

We transform speed from km/hour to m/s:

$$V = 54\frac{km}{hour} = \frac{54000}{3600} = 15\frac{m}{s}$$

Momentum is:

$$p = mV$$

Find the first momentum:

$$p_1 = mV = 0.15 \cdot 15 = 2.25\ kg \cdot \frac{m}{s}$$

After occasion we have the second momentum:

$$p_2 = mV \cdot \cos(45°) = 0.15 \cdot 15 \cdot 0.7 = 1.575\ kg \cdot \frac{m}{s}$$

$$In\ projection\ on\ X:$$

$$p_1 = -2.25\ kg \cdot \frac{m}{s}$$

$$p_2 = 1.575\ kg \cdot \frac{m}{s}$$

$$\Delta p = p_2 - p_1 = 3.825\ kg \cdot \frac{m}{s}$$