



System is Car + Blob

Conserve x-component of momentum:

$$P_{x_i} = P_{x_f}$$

$$m_c v_{c_i} + m_B v_{B_i} = (m_c + m_B)(0) = 0$$

$$\therefore v_{B_i} = -\frac{m_c}{m_B} v_{c_i} = -\underline{300 \text{ m/s}}$$

- This is the x-component of velocity.

- just under the speed of sound!