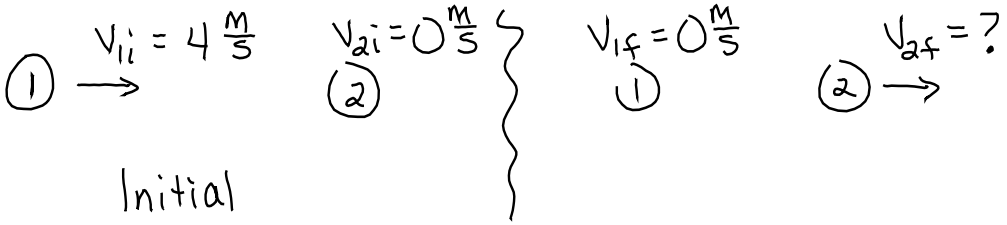
(45)



Initial

$m_1 = m_2 = m$

Elastic Collision:

$$m_1 v_{1i} + m_2 v_{2i} = m_1 v_{1f} + m_2 v_{2f}$$
$$\uparrow \quad \uparrow \quad \uparrow \quad \uparrow$$
$$m \quad m \quad m \quad m$$

$$m v_{1i} + m v_{2i} = m v_{1f} + m v_{2f}$$
$$\uparrow \quad \uparrow$$
$$0 \quad 0$$

$$\frac{m v_{1i}}{m} = \frac{m v_{2f}}{m}$$

$$v_{1i} = \boxed{v_{2f} = 4\frac{m}{s}}$$