

$$\vec{J} = \Delta \vec{p} = \int_{t_i}^{t_f} \vec{F} dt.$$

$$\vec{p} = m\vec{v}.$$

$$\vec{F} = d\vec{p}/dt.$$

$$\vec{p}_{f1} + \vec{p}_{f2} = \vec{p}_{i1} + \vec{p}_{i2}.$$

impulse

momentum

conservation of total momentum

Newton's Second Law can be written as