

Elastic Collision

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- One in which the total kinetic energy of the system after the collision is **equal** to the total kinetic energy before the collision. **No work** is done by nonconservative forces.

Bernulli's Equation

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$$P_1 + \frac{1}{2} \rho v_1^2 + \rho g y_1 = P_2 + \frac{1}{2} \rho v_2^2 + \rho g y_2$$

$$\frac{1}{2} \rho v_1^2 = \rho g h$$

$$v_1 = \sqrt{2gh}$$

$$W_{nc} = \left(\frac{1}{2} m v_1^2 + m g y_1 \right) - \left(\frac{1}{2} m v_2^2 + m g y_2 \right)$$

Heat

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- ▶ Heat is energy that flows from a higher-temperature object to a lower-temperature object because of a difference in temperatures.