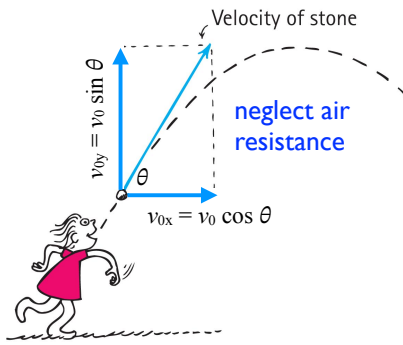


## Projectile Motion



### Horizontal Motion

$$v_x = v_{0x} + \cancel{a_x \Delta t}$$

$$x_f = x_i + v_{0x} \Delta t + \cancel{\frac{1}{2} a_x (\Delta t)^2}$$

$$\Delta x =$$

$$v_{0x} =$$

$$v_x = v_{0x}$$

$$a_x = 0$$

$$\Delta t =$$

### Vertical Motion

$$v_{fy} = v_{0y} + a_y \Delta t$$

$$y_f = y_i + v_{0y} \Delta t + \frac{1}{2} a_y (\Delta t)^2$$

$$v_y^2 = v_{0y}^2 + 2a_y \Delta y$$

$$\Delta y =$$

$$v_{0y} =$$

$$v_y =$$

$$|a_y| = g$$

$$\Delta t =$$

1. **Battleship:** A battleship simultaneously fires two shells toward two enemy ships, one close by (A), and one far away (B). The shells leave the battleship at different angles and travel along the indicated parabolic trajectories. Which enemy ship is hit first?

