

# ACT

Dennis and Carmen are standing on the edge of a cliff. Dennis throws a basketball vertically upward, and at the same time Carmen throws a basketball vertically downward with the same initial speed. You are standing below the cliff observing this strange behavior. **Whose ball hits the ground first?**

A. Dennis' ball

B. Carmen's ball

C. Same

$$y = y_0 + v_0 t + \frac{1}{2} a t^2$$

$$\text{Dennis: } 0 = H + v_0 t - \frac{1}{2} g t^2$$

$$\text{Carmen: } 0 = H - v_0 t - \frac{1}{2} g t^2$$

