

UNIVERSITY OF ALABAMA
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Quiz 2

$$\mathbf{a} = \text{const} \quad (|\mathbf{a}| = 9.8 \text{ m/s}^2 \text{ near earth's surface})$$

$$\mathbf{v}(t) = \mathbf{v}_o + \mathbf{a}t$$

$$\mathbf{x}(t) = \mathbf{x}_o + \mathbf{v}_o t + \frac{1}{2} \mathbf{a}t^2$$

1. A bullet is fired horizontally from a gun, and another bullet is simultaneously dropped from the same height. Which bullet hits the ground first (ignoring air resistance)?
 - the fired bullet
 - the dropped bullet
 - they hit the ground at the same time
2. You throw a ball upward. After half of the time to the highest point, the ball has covered:
 - half the distance to the top
 - more than half the distance
 - less than half the distance
 - it depends on how fast you throw the ball
3. A ball is dropped, and then another ball is dropped from the same spot one second later. As time goes on while the balls are falling, the distance between them (ignoring air resistance)
 - increases steadily
 - increases and approaches a limiting value
 - decreases
 - remains the same