1 Class Handout - Projectile Motion

1. Throw a rock off a cliff that is $125m$ high with a horizontal velocity of $20\frac{m}{s}$. Assume $g = 10\frac{m}{s^2}$.

- How long does it take for the rock to hit the ground?

- How far does the rock travel from the base of the cliff?

2. Throw a baseball with an initial velocity of $40\frac{m}{s}$ at an angle of 60 degrees with respect to the horizontal.. Assume $g = 10\frac{m}{s^2}$.

- What is the acceleration at the top of its flight?

- How long does it take to reach the top of its flight?

- How high does it get?

- What is the total flight time?

- What is its range?

3. Throw a baseball with an initial velocity of $40\frac{m}{s}$ straight up. Assume $g = 10\frac{m}{s^2}$.

- What is the acceleration at the top of its flight?

- How long does it take to reach the top of its flight?

- How high does it get?

- What is the total flight time?

- What is its range?

4. Throw a baseball with an initial velocity of $40\frac{m}{s}$ at an angle of 30 degrees with respect to the horizontal.. Assume $g = 10\frac{m}{s^2}$.

- What is the acceleration at the top of its flight?

- How long does it take to reach the top of its flight?

- How high does it get?

- What is the total flight time?

- What is its range?