Accel. PreCalculus Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Projectile Motion Notes & Practice Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Example: Suppose you hit a golf ball at an initial velocity of 150 ft/sec. at an angle of 30◦.

1. Write the parametric equations that describe the position of the ball.
2. How long is the golf ball in the air?
3. Determine the maximum height of the ball and the time at which the maximum height happened.
4. Determine the distance the ball traveled.

Practice

1. A baseball is thrown with an initial velocity of 50 ft/sec. at an angle of 60◦ and an initial height of 5 ft. Assume that gravity is the only force acting on the baseball.

1. When will the baseball hit the ground?
2. How far does the baseball travel in the horizontal direction?
3. What is the maximum height attained by the ball?

2. A golfer hits a ball with an initial velocity of 133 ft/sec and at an angle of 36◦

1. Write the parametric equations that describe the path of the ball.
2. Using the equations from part a, sketch a graph of the path of the ball.
3. Find when and where the ball will hit the ground.
4. Will the ball clear a fence 9 ft high that is at a distance of 275 ft from the golfer?