HW #60 7-5 Word Problem Practice
Parametric Equations

1. PHYSICS A rock is thrown at an initial velocity of 5 meters per second at an angle of 8° with the ground. After 0.4 second, how far has the rock traveled horizontally?

2. PLAYING CATCH Tom and Sarah are playing catch. Tom tosses a ball to Sarah at an initial velocity of 38 feet per second at an angle of 28° from a height of 4 feet. Sarah is 40 feet away from Tom.

a. How high above the ground will the ball be when it gets to Sarah?

b. What is the maximum height of the ball?

3. TENNIS Melinda hits a tennis ball with an initial velocity of 42 feet per second at an angle of 16° with the horizontal from a height of 2 feet. She is 20 feet from the net and the net is 3 feet high. Will the ball go over the net?

4. BASKETBALL Mandy throws a basketball with an initial velocity of 28 feet per second at an angle of 60° with the horizontal. If Mandy releases the ball from a height of 5 feet, write a pair of equations to determine the vertical and horizontal positions of the ball.

5. GOLF Julio hit a golf ball with an initial velocity of 100 feet per second at an angle of 39° with the horizontal.

a. Write parametric equations for the flight of the ball.

b. Find the maximum height the ball reaches.

6. BASEBALL Micah hit a baseball at an initial velocity of 120 feet per second from a height of 3 feet at an angle of 34°.

a. How far will the ball travel horizontally before it hits the ground?

b. What is the maximum height the ball will reach?

c. If the fence is 8 feet tall and 400 feet from home plate, will the ball clear the fence to be a home run? Explain.