

1. A baseball is hit when the ball is 3 feet above the ground. It leaves the bat with an initial velocity of 152 ft/sec and at an angle of elevation of 20° . A 20 foot fence is 400 feet from home plate. Will the ball make it over the fence?

a. Use parametric equations to represent the flight of the ball.

b. Use the equations and your calculator to determine if it is a homerun.

2. Use a graphing utility to graph the path of a projectile launched from ground level at a value of $\theta=60^\circ$ and with an initial velocity of 88 feet per second. Find the maximum height of the object and the range it will travel.

(Over)

3. A soccer player determines that she consistently kicks the ball at an angle of 30 degrees, with an initial velocity of $25 \text{ m}^2/\text{sec}$. How far is the ball from the soccer player when it hits the ground?

4. Determine whether a baseball hit with an initial velocity of $115 \text{ ft}^2/\text{sec}$ at a launch angle of 45 degrees will clear a four foot fence 400 feet from home plate. Assume that the ball is hit when its height is 4 feet from the ground.