

Name \_\_\_\_\_

What was the Longest Home Run in Major League Baseball?

In 1919, Babe Ruth hit what some experts called the longest home run ever recorded in major league baseball. In an exhibition game between the Boston Red Sox and the New York Giants, he sent the ball into a parabolic orbit. The trajectory of the ball is given by the equation:

$$y = x - .0017x^2$$

where  $x$  represents the horizontal distance in feet and  $y$  the vertical distance in feet of the ball from home plate.

*What was the greatest height reached by the ball?* \_\_\_\_\_

*How far from home plate did the ball land?* \_\_\_\_\_

Do this in two ways, first using a graphing calculator and secondly, using calculus.

Solution #1:

Enter the equation in Y1.

Decide on an appropriate range (enter values for xMin, xMax, yMin, and yMax).

Use the Zoom feature to zero in on the maximum values.

Use the Trace feature to get an accurate value to answer the questions above.

Solution #2:

Use calculus and algebra to solve the problem.