**Fenway Park**



When a batter hits a baseball, the height of the baseball is a function of the distance the ball traveled from home plate.

For example, a hitter at Fenway Park hits a ball whose height is represented by the equation:



*y* is height of the ball (in feet) and *x* is the horizontal distance the ball is from home plate (in feet).

We can use this quadratic function to find how far that ball will travel before it hits the ground. If the ball is hit towards deep center field, where the fence is 420 feet from home plate, we can determine if the ball has gone far enough to be a home run.

1. Discuss in your group how you could use a graphing calculator to estimate how far the ball will travel.
2. Write an equation that could be used to solve this problem.
3. You have probably never solved an equation like this before. What would you need to know in order to solve this equation?
4. Based on what you already know, how high does the ball travel?
5. How far away from home plate does the ball reach its maximum height?
6. How far above the ground was the ball at the moment it was hit by the bat?