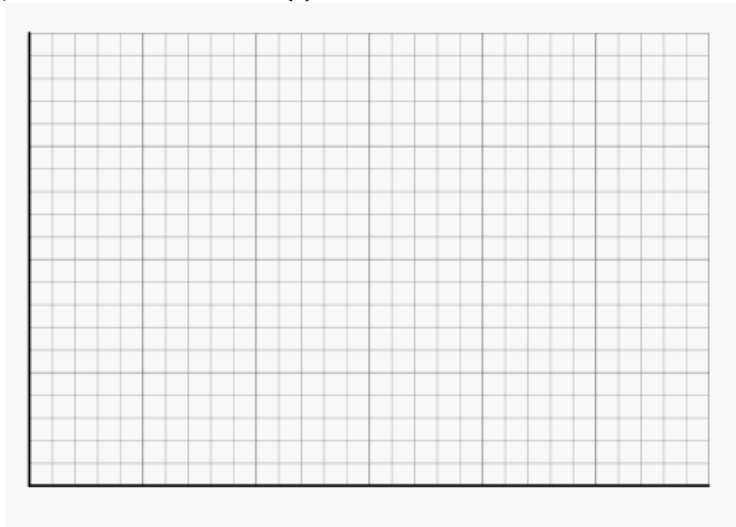


Real-World Applications – Day 2
Unit 2B: Quadratic Functions - Modeling

For each of the following:

- A. Identify the x-intercept(s) and tell what they mean**
- B. Identify the y-intercept and tell what it means**
- C. Identify the maxima/minima of the function and tell what it means**
- D. Graph and label the function**

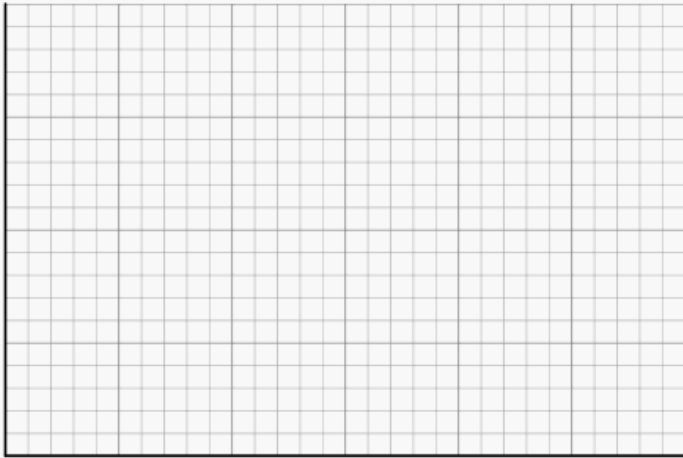
1. Coty throws a football at 55 feet per second from a height of 6 foot. The equation that shows the path of the football is $h(t) = -16t^2 + 55t + 6$.



2. A local department store is running a sidewalk sale that they want to expand to their parking lot. To enclose the area that the sale will be contained in they have to purchase the fencing. In order to maximize the area allowed for the sale they use the equation $A(x) = (25 - x)(8 + x)$



3. Standing at the top of a building a child decides to throw a water balloon at someone's head. They throw the water balloon downward at 15 feet per second from a height of 750 foot. This is modeled by the equation $h(t) = -16t^2 - 15t + 750$



4. You want to run a movie-rental business here in Hoopeston. You want to charge \$2 per day to rent a movie and believe that you will average 300 rentals per week. For every fifty-cent increase in the rental price, the average business can expect to lose 9 rentals per week. The maximum profit and the amount of increase you should charge is given by the equation $C(r) = (2 + 0.50r)(300 - 9r)$

