

Real-World Applications – Creating Equations Day 3
Unit 2B: Quadratic Functions - Modeling

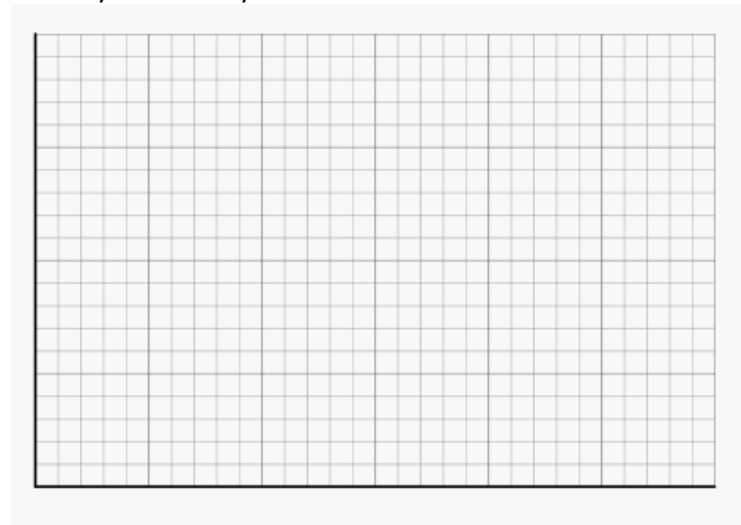
For each of the following:

- A. Write the equation that models the given context**
- B. Identify the x-intercept(s) and tell what they mean**
- C. Identify the y-intercept and tell what it means**
- D. Identify the maxima/minima of the function and tell what it means**
- E. Graph the function**

1. Aly is back to serve the ball in a volleyball match. She leaps up and hits the ball up at 52 feet per second from a height of 6 foot.



2. The construction crew wants to set up a fence that will maximize the amount of space that they have to work in during their new job. Fencing that was previously set up is a rectangular shape that is currently 650 foot by 250 foot. They want to move the fence so that it will maximize the area.



3. Donald Trump climbs to the top of the Trump International Hotel and Tower in Chicago and decides to throw his phone that has been non-stop ringing lately. He throws the phone from the roof which is 1170 feet high downward at 55 feet per second.



4. A standard room with 2 queen beds at the Hilton Garden Inn in Chicago runs \$102 per night. Being Chicago the rooms fill up, but not as much as they would like them to. With 357 rooms total they are averaging 300 rooms booked per night. They want to maximize their money coming in and decide that because they are on the “Magnificent Mile” they will raise their prices by increments of \$51 even though it is projected that they will lose 50 bookings per night.

