

Lesson 1.1.2: Graphs of Quadratic Functions

Targets:

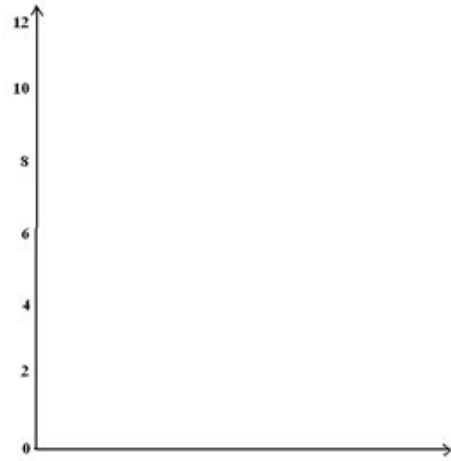
1. I can graphically represent a nonlinear relationship between two quantities.
2. I can interpret the features of a quadratic graph.
3. I can explain the relationship between physical quantities via a graph.

The Soccer Ball

1. Watch the video of the soccer ball rolling down the ramp.
2. Try to describe in words what is happening to the ball. Use words like distance, speed, or elevation.
3. Graph the story below:

Graph the Elevation vs. Time

- label each axis
- give units for each axis
- find specific points you can plot
- if you need to, watch the video over and over again.



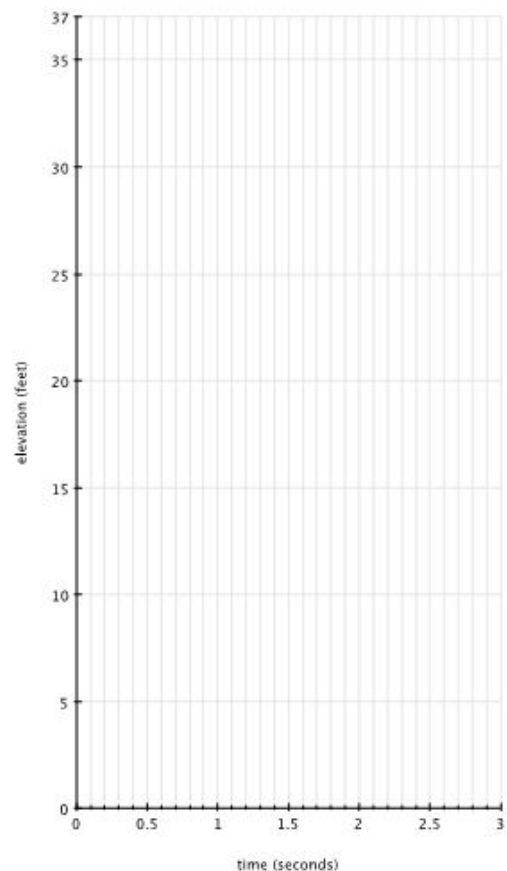
Professor Splash

Do your best to graph Professor Splash's jump.

My advice is to watch the video again, but this time only watch from 32 seconds to 34 seconds (and watch it on slow motion by clicking on the settings button). Try to find out how much time passed for every 5 feet he travels. I am going to do the same thing, and I am going to make a table to help me graph it afterward.

Keep in mind, he starts at 35.5 feet but he jumps up to 36 feet.

When you are done, double check your work by watching the video of my notes.



Example 3

Take the table given in example 3 and graph it in your notes. When you make your coordinate plane, make sure to have at least quadrants 1 and 2. The sides should be your x-values and your Area should be your y-values.

Example 3

The table below gives the area of a square with sides of whole number lengths. Have students plot the points in the table on a graph and draw the curve that goes through the points.

<i>Side</i> (cm)	0	1	2	3	4
<i>Area</i> (cm ²)	0	1	4	9	16

On the same graph, reflect the curve across the y-axis. This graph is an example of a "graph of a quadratic function."

Exit Ticket

Graph the following story. Make sure to label each axis appropriately and be specific with your units.

- If you jumped in the air three times, what might the elevation versus time graph of that story look like?

