
Section 2.1: Quadratic Functions and Models

Hand in these questions in class on the due date listed on the course webpage. Late worksheets will not be accepted. **Show all work that leads to each answer.**

For each of the two quadratic functions listed below, do each of the following:

- Find the roots of the function, if any
- Find the y -intercept of the graph of the function.
- Rewrite the function in standard form by completing the square.
- Graph the function. Label the vertex and all intercepts on your graph.
- Determine the range of the function in interval notation.

1. $f(x) = x^2 + 3x - 4$

2. $k(x) = 3x^2 - 9x + 10$

3. Find a function f whose graph is a parabola with vertex $(-1, 2)$, and for which $f(0) = -2$.

4. What is the equation of the parabola shown below?

