

Name: \_\_\_\_\_ Section: \_\_\_\_\_

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## Worksheet 2: Quadratic Functions

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Hand in this worksheet 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 quadratic functions listed in questions 1 through 5, do each of the following:

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

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

2.  $g(x) = x^2 - 4x$

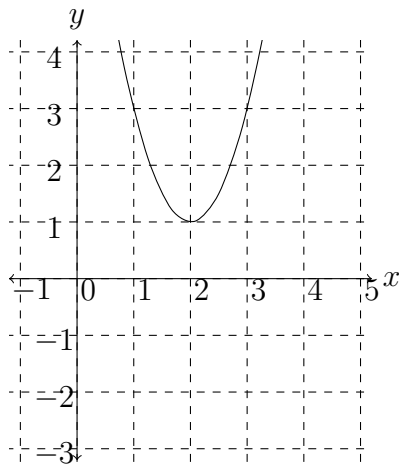
3.  $h(x) = -x^2 + 6x - 1$

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

5.  $s(t) = -2t^2 + 3t + 4$

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

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



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

