Worksheet – Quadratics

Be sure to show the work that leads to your answer. Late worksheets WILL NOT BE ACCEPTED.

1. For each of the quadratic functions below, do five things:
   a. find its roots, if any
   b. find its y-axis intercept
   c. complete the square
   d. graph it (plot roots (if any), vertex, and y-intercept)
   e. determine its range

   (1) $x^2 - 4x$
   (2) $x^2 + 3x - 4$
   (3) $-x^2 + 6x + 2$
   (4) $3x^2 - 9x + 12$
   (5) $2x^2 + 3x + 4$

2. Find a function $f$ whose graph is a parabola with a vertex at (1,3) such that $f(2) = 7$.

3. What is the equation of the parabola below?

4. What is the equation of the parabola below?