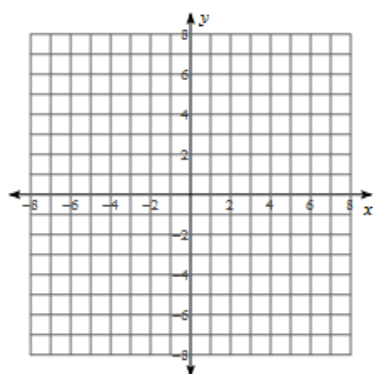
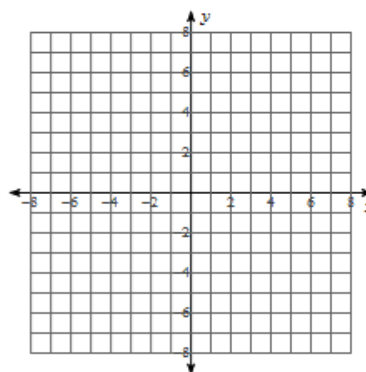


Identify the vertex, axis of symmetry, direction of opening, min/max value, y-intercept, and x-intercepts of each. Then sketch the graph.

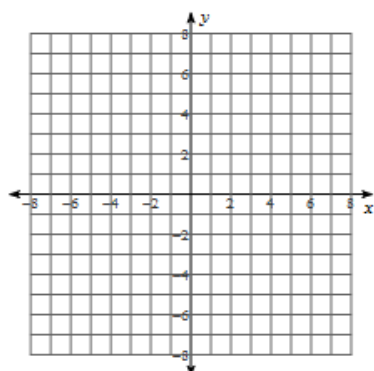
1) $y = -2x^2 - 4x - 3$



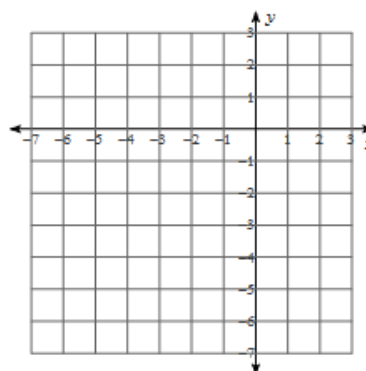
2) $y = \left(x - \frac{3}{2}\right)^2 - \frac{9}{4}$



3) $y = -x^2 - 10x - 26$



4) $y \leq -2x^2 - 4x$



Determine whether the function is linear or quadratic. Identify the quadratic, linear, and constant terms.

$$y = (x + 1)(6x - 6) - 6x^2$$

$$f(x) = (3x + 2)(-6x - 3)$$

Dalco Manufacturing estimates that its weekly profit, P , in hundreds of dollars, can be approximated by the formula $P = -2x^2 + 4x + 10$, where x is the number of units produced per week, in thousands.

- How many units should the company produce per week to earn the maximum profit?
- Find the maximum weekly profit.

Use the graph of $y = (x - 3)^2 + 5$.

- a. If you translate the parabola to the right 2 units and down 7 units, what is the equation of the new parabola in vertex form?
- b. If you translate the original parabola to the left 2 units and up 7 units, what is the equation of the new parabola in vertex form?
- c. How could you translate the new parabola in part (a) to get the new parabola in part (b)?

What information can you get from graphing a quadratic? How can you use a calculator to help you?