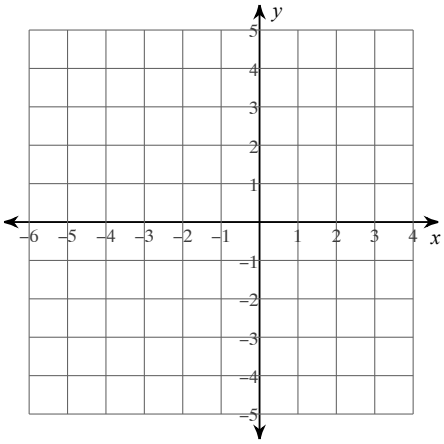
4.4 Completing the Square

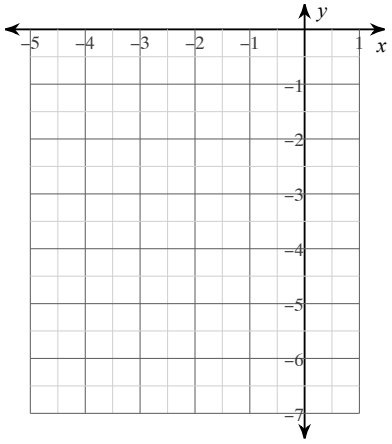
Date_____ Period____

Sketch the graph of each function.

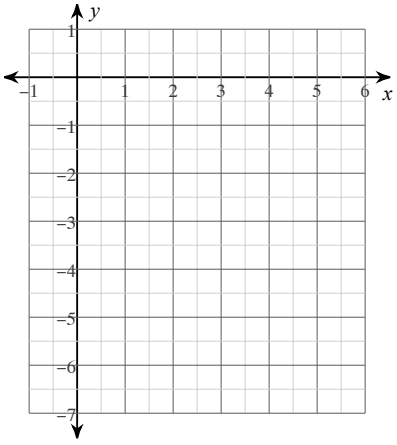
1) $y = 2(x + 2)^2 - 4$



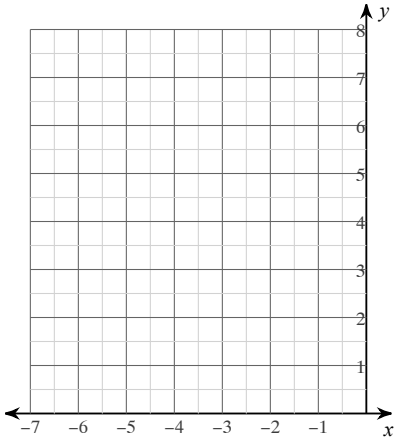
2) $y = -(x + 2)^2 - 2$



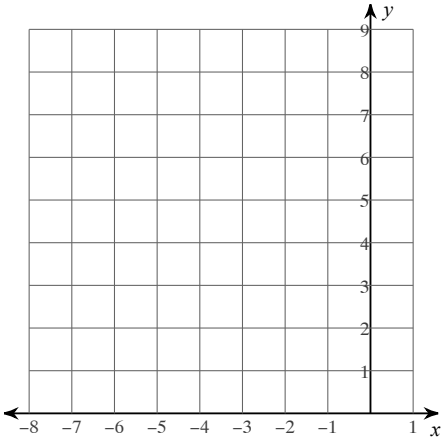
3) $y = -(x - 4)^2 - 1$



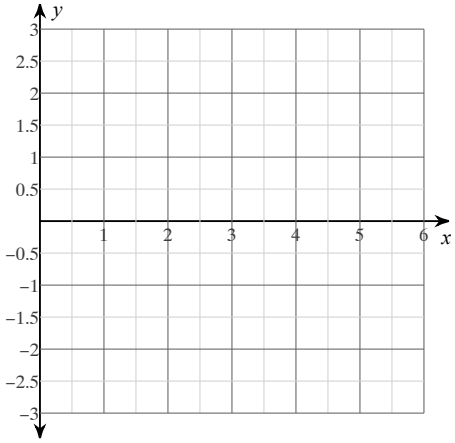
4) $y = (x + 4)^2 + 3$



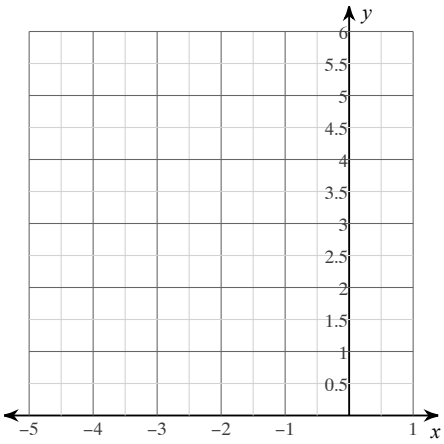
5) $y = x^2 + 8x + 20$



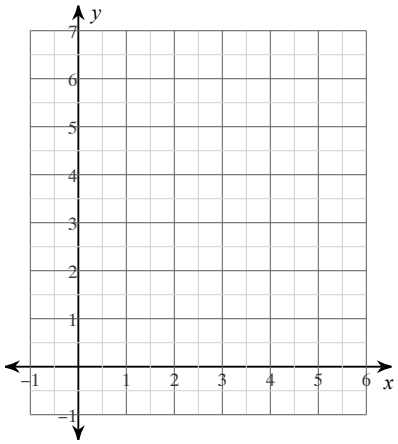
6) $y = x^2 - 6x + 7$



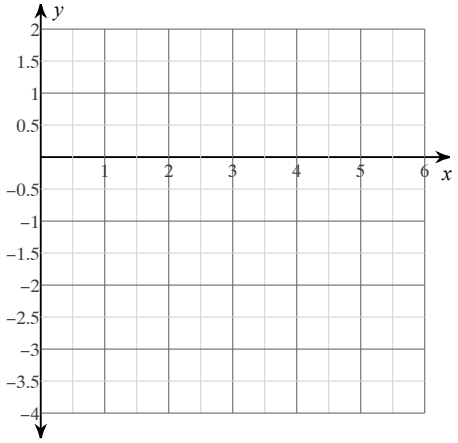
7) $y = x^2 + 4x + 5$



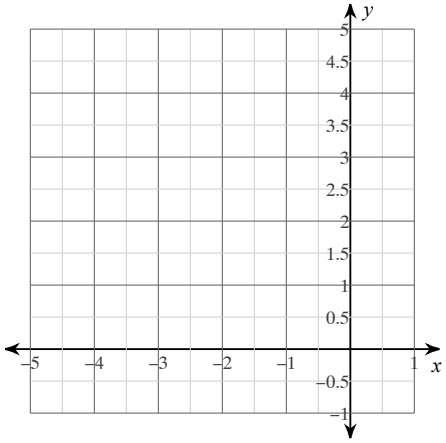
8) $y = x^2 - 8x + 17$



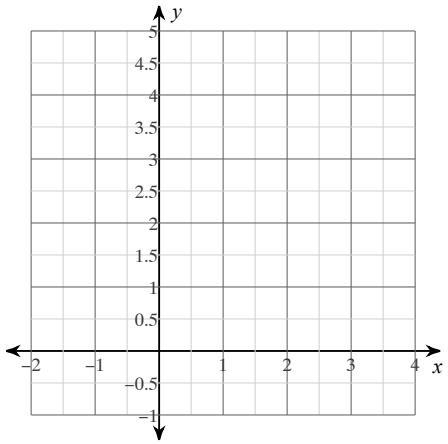
9) $y = -x^2 + 6x - 8$



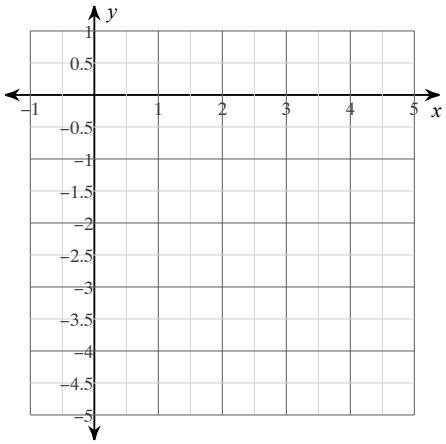
10) $y = -x^2 - 6x - 5$



11) $y = -x^2 + 2x + 3$

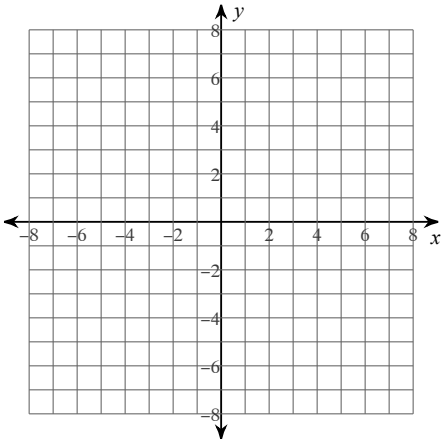


12) $y = x^2 - 4x$

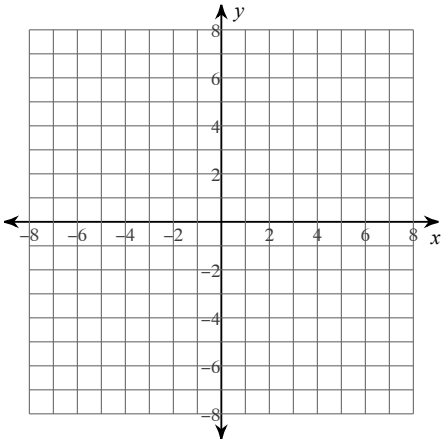


Identify the vertex, axis of symmetry, direction of opening, min/max value, y-intercept, and x-intercepts of each. Then sketch the graph.

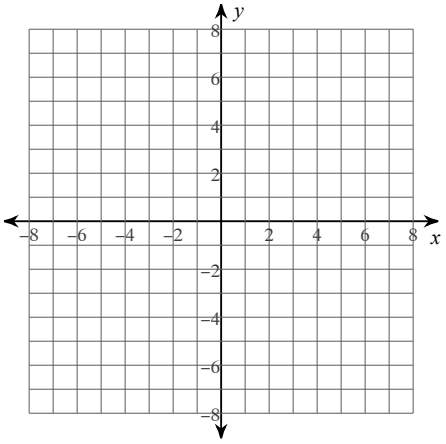
13) $y = -x^2 - 8x - 15$



14) $y = -x^2 - 6x - 10$



15) $y = x^2 + 2$



16) $y = x^2 + 12x + 39$