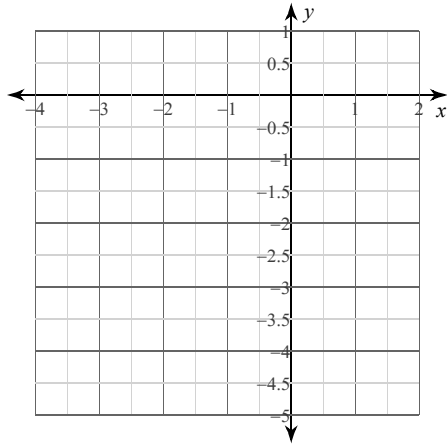


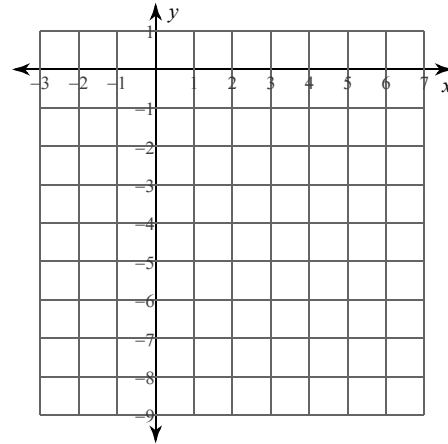
4-1 Extra Practice

Sketch the graph of each function. Determine the vertex, axis of symmetry, maximum or minimum, and the domain and range of each function.

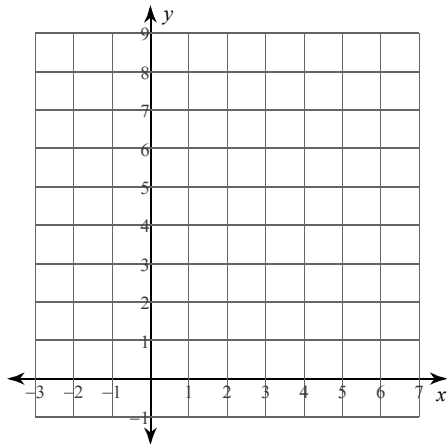
1)  $f(x) = -x^2$



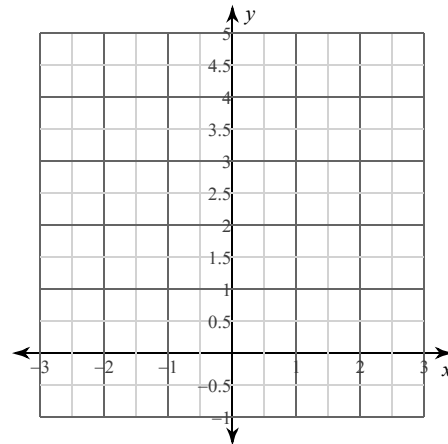
2)  $f(x) = -2x^2$



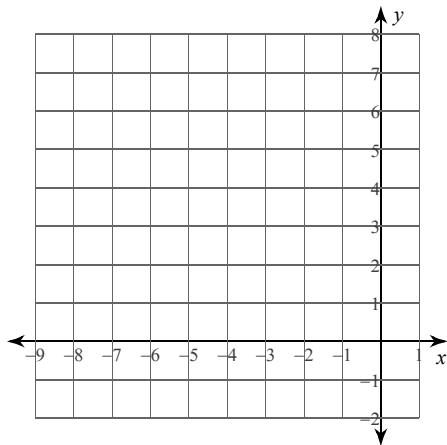
3)  $f(x) = 2x^2$



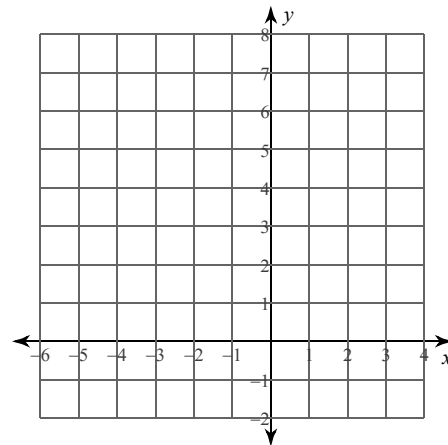
4)  $f(x) = x^2$



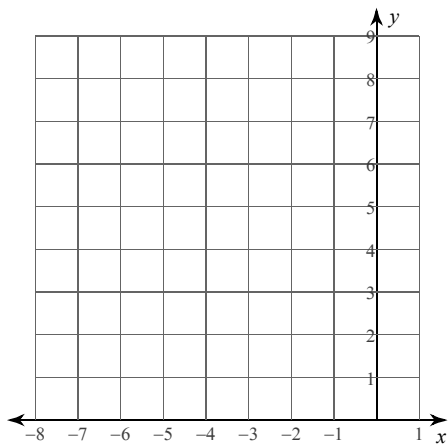
5)  $f(x) = 2(x + 2)^2 - 1$



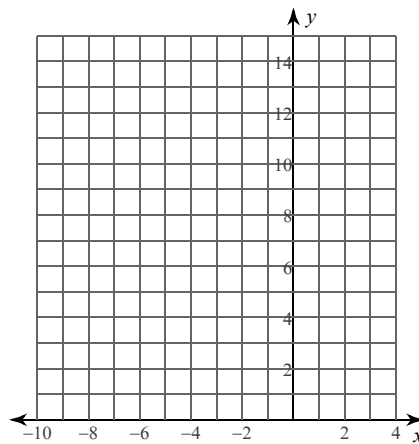
6)  $f(x) = 2(x - 2)^2 - 1$



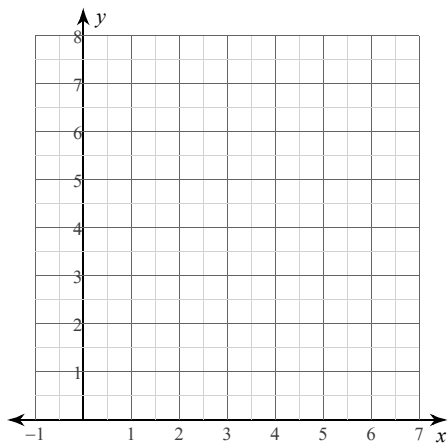
7)  $f(x) = (x + 4)^2 + 4$



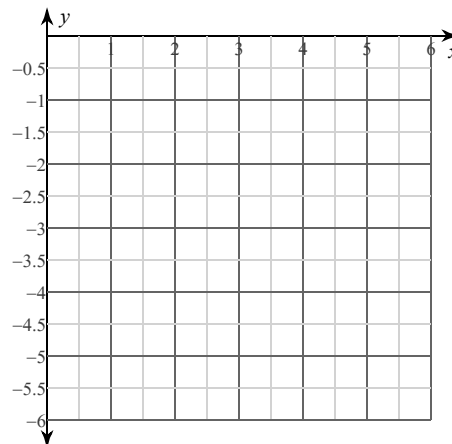
8)  $f(x) = 3(x - 2)^2 + 2$



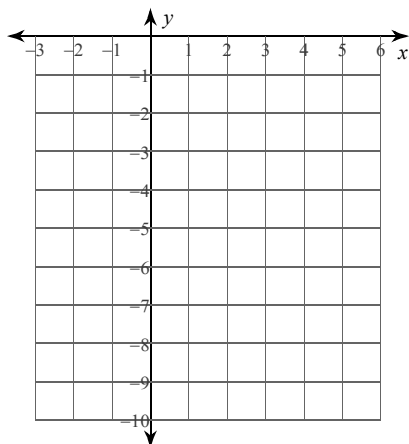
9)  $f(x) = (x - 3)^2 + 3$



10)  $f(x) = -(x - 3)^2 - 1$



11)  $f(x) = -2(x - 4)^2 - 1$



12)  $f(x) = -2(x + 3)^2 - 3$

