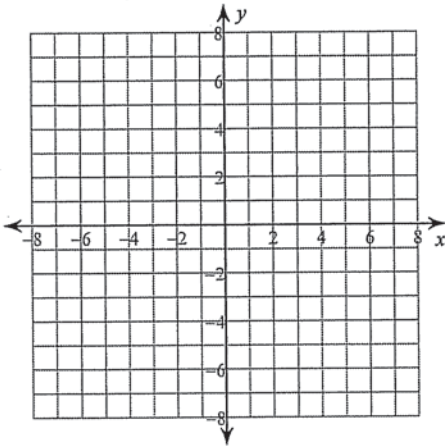


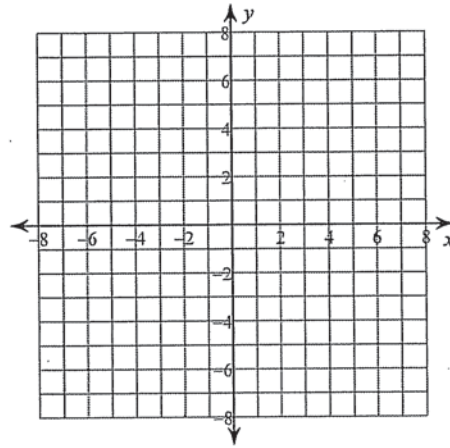
Practice 3.1

Graph each equation.

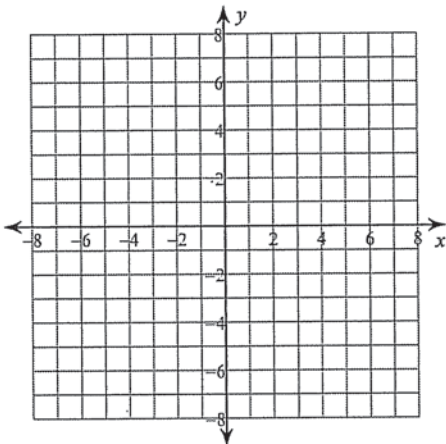
1) $y = (x - 4)^2 - 1$



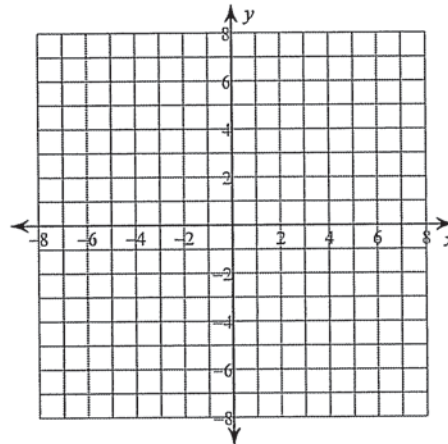
2) $y = x^2 + 3$



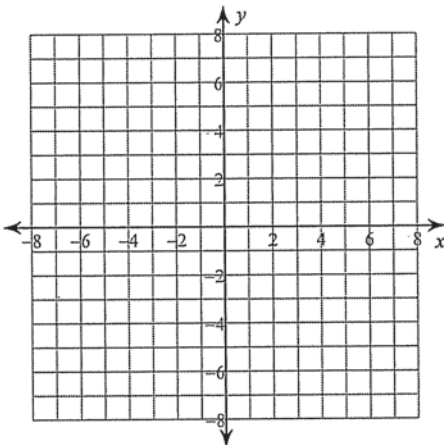
3) $y = (x - 2)^2$



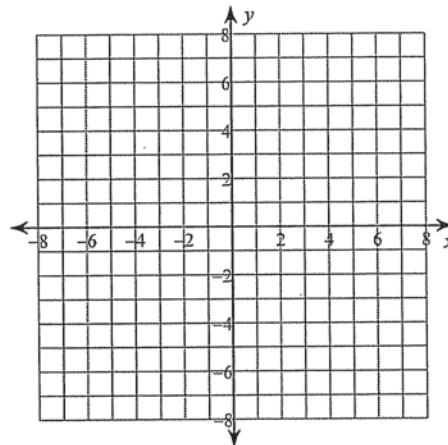
4) $y = -(x + 4)^2 - 6$



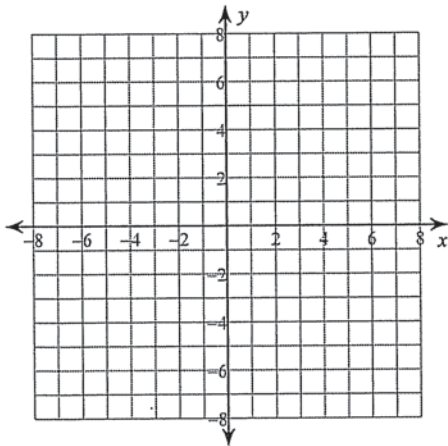
5) $y = -(x + 4)^2$



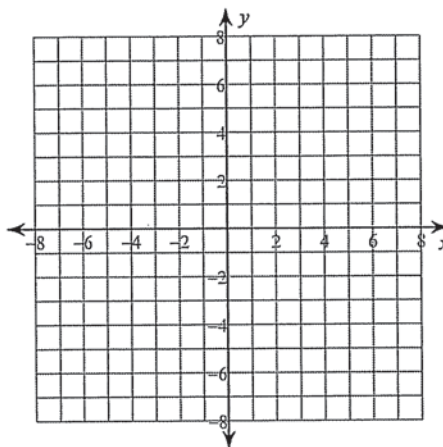
6) $y = -x^2 - 3$



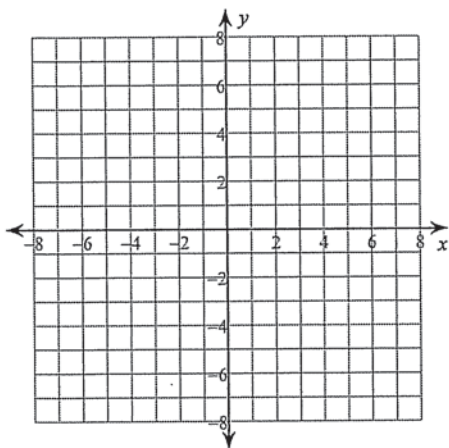
$$7) f(x) = \frac{1}{2}(x+2)^2 - 2$$



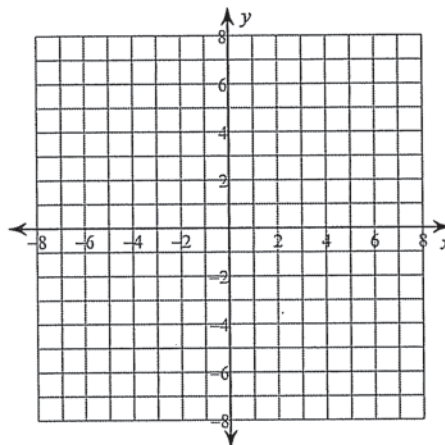
$$8) f(x) = -2(x+2)^2 - 1$$



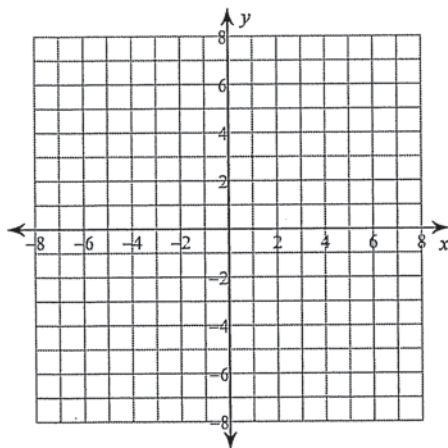
$$9) f(x) = -3(x+4)^2 - 5$$



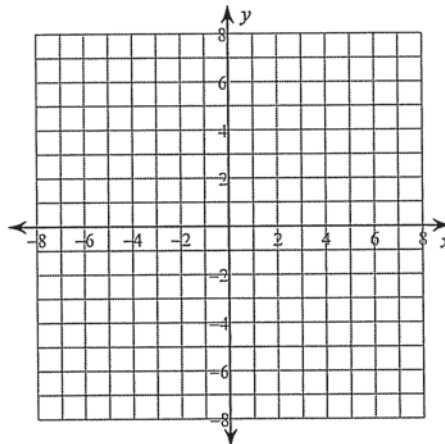
$$10) f(x) = \frac{1}{4}(x+4)^2$$



$$11) f(x) = -\frac{1}{3}(x-2)^2 - 2$$



$$12) f(x) = 2x^2 - 1$$



Identify the vertex, axis of symmetry, direction of opening, min/max value, and y-intercept of each.

13) $y = 13(x - 6)^2 - 6$

14) $y = -(x - 10)^2 + 2$

15) $y = 2(x + 1)^2 + 8$

16) $y = -14(x + 3)^2 - 5$

17) $y = (x + 8)^2 + 7$

18) $y = -(x + 9)^2 - 9$