Algebra 2

Name **KEY**

Standard Form

Date_____ Period____

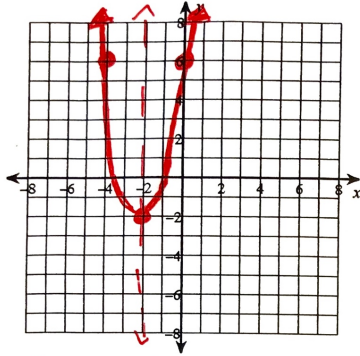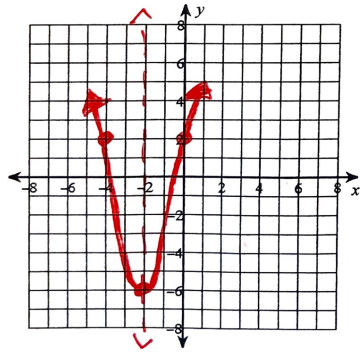**Identify the vertex, axis of symmetry, min/max value, *y*-intercept, and decreasing/increasing values of each. Then sketch the graph.**
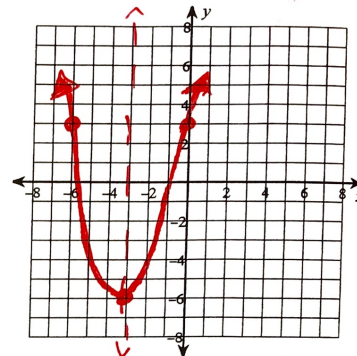
1) $f(x) = 2x^2 + 8x + 6$

VERTEX: $(-2, -2)$

AXIS OF SYMMETRY: $x = -2$

MAX/MIN: **MIN** AT $y = -2$

Y-INT: $y = 6$

DECREASING: $x < -2$

INCREASING: $x > -2$

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

VERTEX: $(-3, -6)$

AXIS OF SYMMETRY: $x = -3$

MAX/MIN: **MIN** AT $y = -6$

Y-INT: $y = 3$

DECREASING: $x < -3$
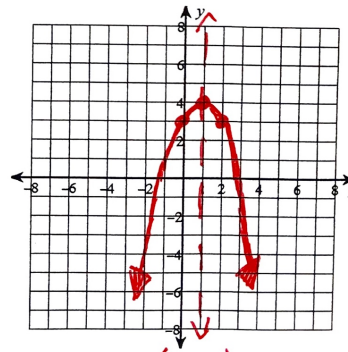
INCREASING: $x > -3$

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

VERTEX: $(-2, -6)$

AXIS OF SYMMETRY: $x = -2$

MAX/MIN: **MIN** AT $y = -6$
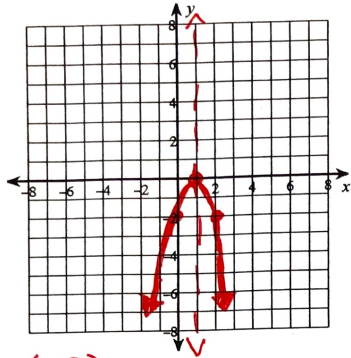
Y-INT: $y = 2$

DECREASING: $x < -2$

INCREASING: $x > -2$

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

VERTEX: $(1, 4)$

AXIS OF SYMMETRY: $x = 1$

MAX/MIN: **MAX** AT $y = 4$

Y-INT: $y = 3$

DECREASING: $x > 1$

INCREASING: $x < 1$

-1-

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

VERTEX: $(1, 0)$

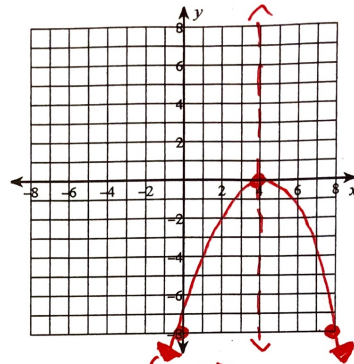AXIS OF SYMMETRY: $x = 1$

MAX/MIN: __MAX__ AT $y = 0$

y-INT: $y = -2$

DECREASING: $x > 1$

INCREASING: $x < 1$

6) $f(x) = -\frac{1}{2}x^2 + 4x - 8$
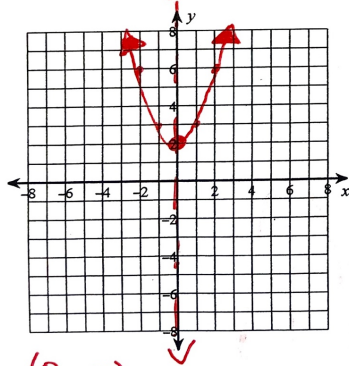

VERTEX: $(4, 0)$

AXIS OF SYMMETRY: $x = 4$

MAX/MIN: __MAX__ AT $y = 0$

y-INT: $y = -8$

DECREASING: $x > 4$

INCREASING: $x < 4$

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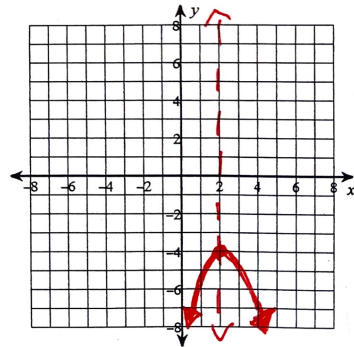

VERTEX: $(0, 2)$

AXIS OF SYMMETRY: $x = 0$

MAX/MIN: __MIN__ AT $y = 2$

y-INT: $y = 2$

DECREASING: $x < 0$

INCREASING: $x > 0$

8) $f(x) = -2x^2 + 8x - 12$

VERTEX: $(2, -4)$

AXIS OF SYMMETRY: $x = 2$

MAX/MIN: __MAX__ AT $y = -4$

y-INT: $y = -12$

DECREASING: $x > 2$

INCREASING: $x < 2$