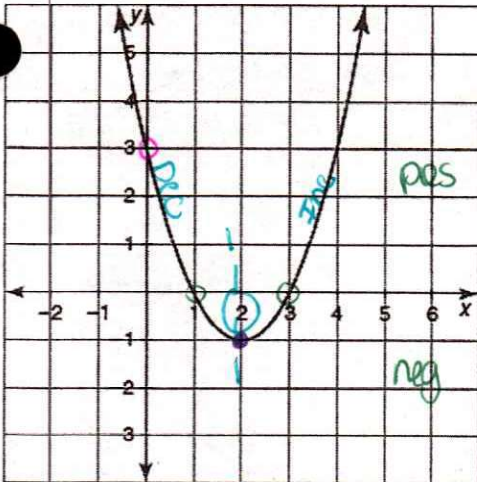
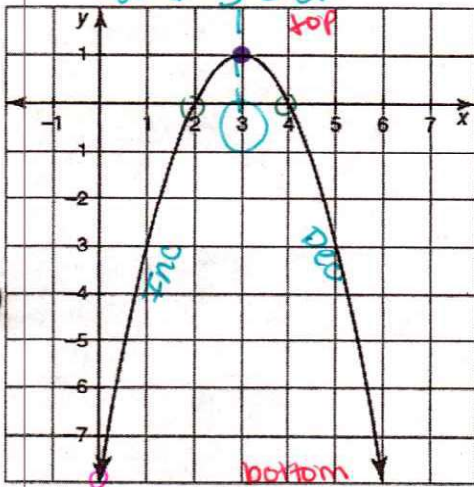


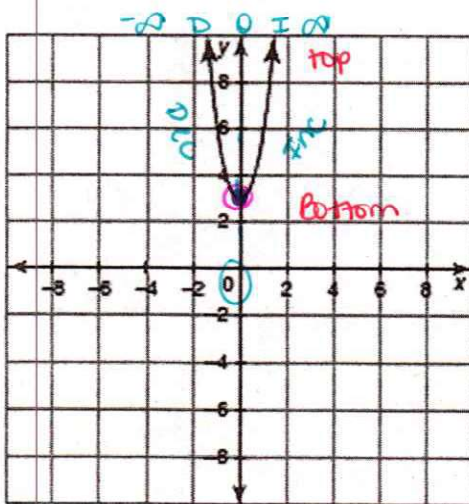
Practice: Describe the characteristics of the following graphs:



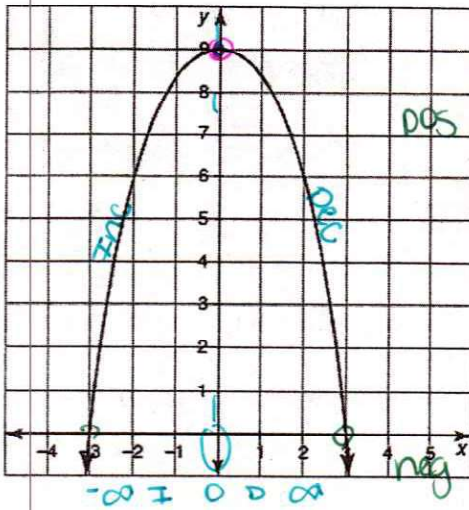
Domain: $(-\infty, \infty)$
 Range: $(-1, \infty)$ or $y \geq -1$
 Vertex: $(2, -1)$
 Axis of Sym: $x = 2$
 Y-Intercept: $(0, 3)$
 Zeros: $x = 1, x = 3$
 Extrema: min
 Max/Min Value: $y = -1$
 Int of Inc: $(2, \infty)$
 Int of Dec: $(-\infty, 2)$
 Positive: $(-\infty, 1) (3, \infty)$
 Negative: $(1, 3)$
 End Behavior: As $x \rightarrow -\infty, f(x) \rightarrow \infty$. As $x \rightarrow \infty, f(x) \rightarrow \infty$



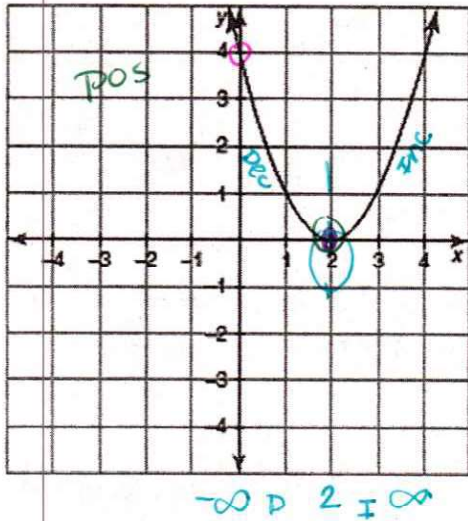
Domain: $(-\infty, \infty)$
 Range: $(-\infty, 1)$ or $y \leq 1$
 Vertex: $(3, 1)$
 Axis of Sym: $x = 3$
 Y-Intercept: $(0, 8)$
 Zeros: $x = 2, x = 4$
 Extrema: max
 Max/Min Value: $y = 1$
 Int of Inc: $(-\infty, 3)$
 Int of Dec: $(3, \infty)$
 Positive: $(2, 4)$
 Negative: $(-\infty, 2) (4, \infty)$
 End Behavior: As $x \rightarrow -\infty, f(x) \rightarrow -\infty$. As $x \rightarrow \infty, f(x) \rightarrow -\infty$



Domain: $(-\infty, \infty)$
 Range: $(3, \infty)$ or $y \geq 3$
 Vertex: $(0, 3)$
 Axis of Sym: $x = 0$
 Y-Intercept: $(0, 3)$
 Zeros: none
 Extrema: min
 Max/Min Value: $y = 3$
 Int of Inc: $(0, \infty)$
 Int of Dec: $(-\infty, 0)$
 Positive: $(-\infty, \infty)$
 Negative: none
 End Behavior: As $x \rightarrow -\infty, f(x) \rightarrow \infty$. As $x \rightarrow \infty, f(x) \rightarrow \infty$



Domain: $(-\infty, \infty)$
 Range: $(-\infty, 9)$
 Vertex: $(0, 9)$
 Axis of Sym. $x=0$
 Y-Intercept: $(0, 9)$
 Zeros: $x=-3, x=3$
 Extrema: max
 Max/Min Value: $y=9$
 Int of Inc: $(-\infty, 0)$
 Int of Dec: $(0, \infty)$
 Positive: $(-3, 3)$
 Negative: $(-\infty, -3) (3, \infty)$
 End Behavior: As $x \rightarrow -\infty, f(x) \rightarrow -\infty$. As $x \rightarrow \infty, f(x) \rightarrow -\infty$



Domain: $(-\infty, \infty)$
 Range: $(0, \infty)$
 Vertex: $(2, 0)$
 Axis of Sym. $x=2$
 Y-Intercept: $(0, 4)$
 Zeros: $x=-2$
 Extrema: min
 Max/Min Value: $y=0$
 Int of Inc: $(2, \infty)$
 Int of Dec: $(-\infty, 2)$
 Positive: $(-\infty, \infty)$
 Negative: none
 End Behavior: As $x \rightarrow -\infty, f(x) \rightarrow \infty$. As $x \rightarrow \infty, f(x) \rightarrow \infty$

Day 3 - Characteristics of Quadratic Functions

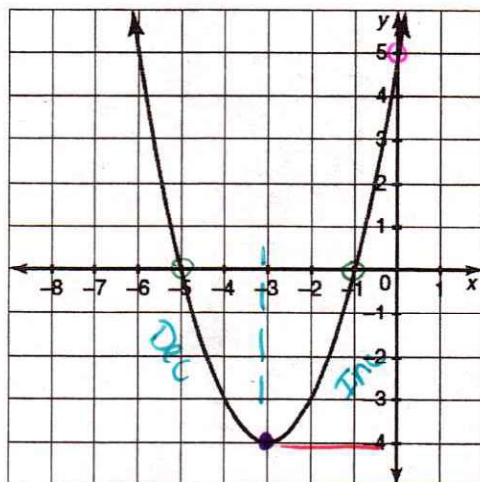
Name: _____

Practice Assignment

Date: _____ Block: _____

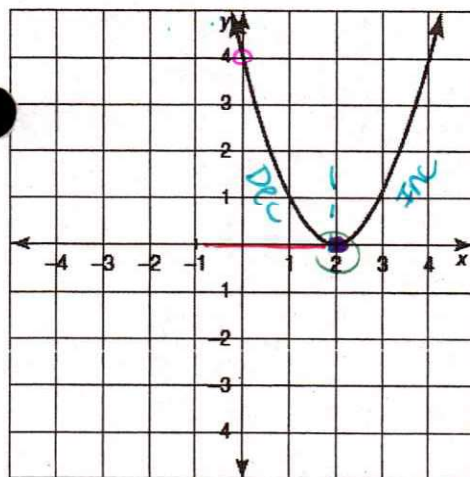
Identify all of the characteristics listed for the following graphs.

1.



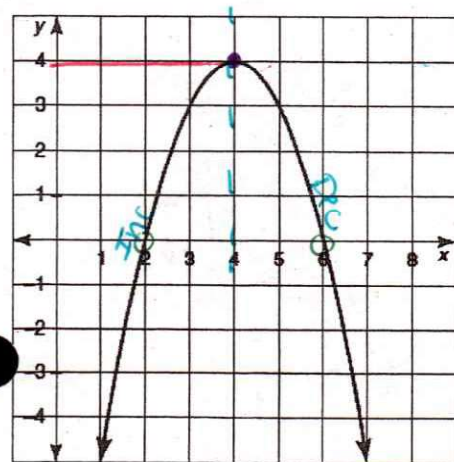
Domain: $(-\infty, \infty)$
 Range: $(-4, \infty)$
 Vertex: $(-3, -4)$
 Axis of Sym. $x = -3$
 Y-Intercept: $(0, 5)$
 Zeroes: $x = -5, x = -1$
 Extrema: min
 Max/Min Value: $y = -4$
 Int of Inc: $(-3, \infty)$
 Int of Dec: $(-\infty, -3)$
 Positive: $(-5, -1)$
 Negative: $(-\infty, -5)$
 End Behavior: As $x \rightarrow -\infty, f(x) \rightarrow \infty$. As $x \rightarrow \infty, f(x) \rightarrow \infty$

2.



Domain: $(-\infty, \infty)$
 Range: $(0, \infty)$
 Vertex: $(2, 0)$
 Axis of Sym. $x = 2$
 Y-Intercept: $(0, 4)$
 Zeroes: $x = 2$
 Extrema: min
 Max/Min Value: $y = 0$
 Int of Inc: $(2, \infty)$
 Int of Dec: $(-\infty, 2)$
 Positive: $(-\infty, \infty)$
 Negative: none
 End Behavior: As $x \rightarrow -\infty, f(x) \rightarrow \infty$. As $x \rightarrow \infty, f(x) \rightarrow \infty$

3.

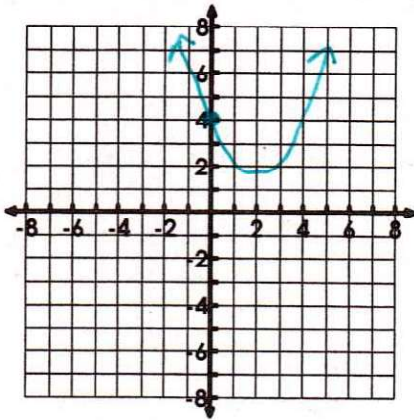


Domain: $(-\infty, \infty)$
 Range: $(-\infty, 4)$
 Vertex: $(4, 4)$
 Axis of Sym. $x = 4$
 Y-Intercept: $(0, -12)$
 Zeroes: $x = 2, x = 6$
 Extrema: max
 Max/Min Value: $y = 4$
 Int of Inc: $(-\infty, 4)$
 Int of Dec: $(4, \infty)$
 Positive: $(2, 6)$
 Negative: $(-\infty, 2)(6, \infty)$
 End Behavior: As $x \rightarrow -\infty, f(x) \rightarrow -\infty$. As $x \rightarrow \infty, f(x) \rightarrow -\infty$

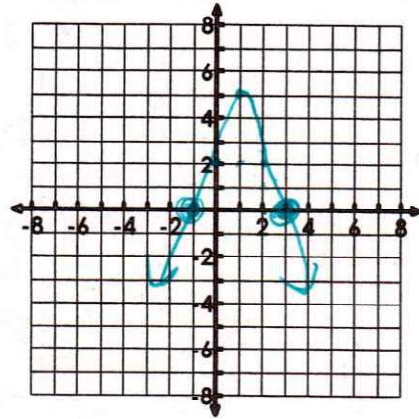
**Answers may vary*

Problems 4 – 9: Use the given description to create a rough sketch of a quadratic function. Your graphs might look different than mine, but they must meet the characteristic described below. Start by placing your characteristics on the graph and create the sketch after that.

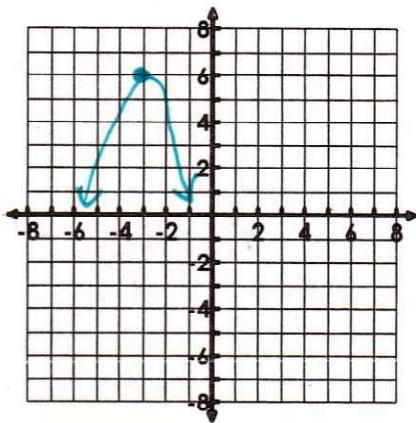
4. Parabola that opens up and has a y-intercept of (0, 5).



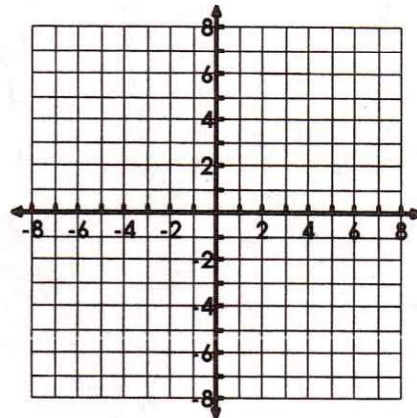
5. Parabola that opens down and has x-intercepts of 3 and -1.



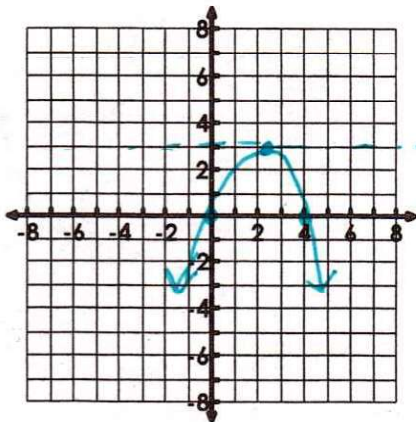
6. Parabola with end behavior that approaches $-\infty$ and has a vertex of (-3, 6).



7. Parabola with a negative part of the graph between $-2 \leq x \leq 2$.



8. Parabola with a maximum of 3 and zeros of 0 and 4.



9. Parabola with an axis of symmetry of $x = -1$ and a range of $y \geq -5$.

