

Unit 4 Review Part 2 Honors

1.  $y = -\frac{1}{2}x^2 + 2x - 1$

A.O.S.:  $x = 2$

Vertex:  $(2, 1)$

y-intercept:  $(0, -1)$

Domain:  $(-\infty, \infty)$

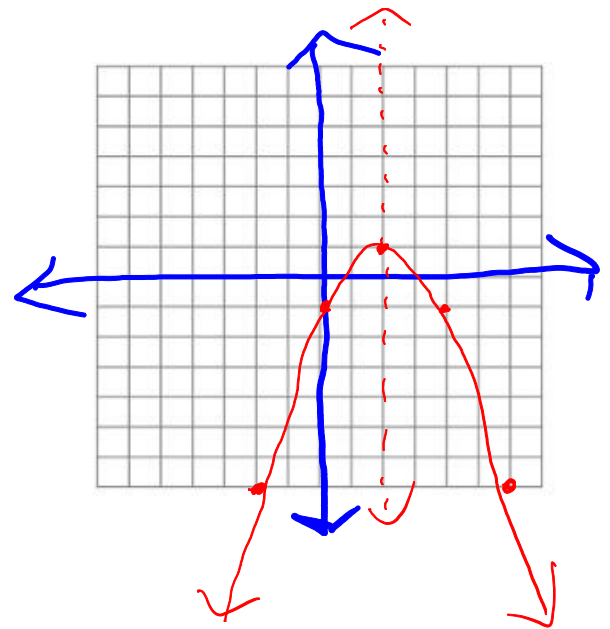
Range:  $(-\infty, 1]$

Increasing Interval:  $(-\infty, 2)$

Decreasing Interval:  $(2, \infty)$

End Behavior:  $x \rightarrow -\infty \quad y \rightarrow -\infty$   
 $x \rightarrow \infty \quad y \rightarrow -\infty$

$$\begin{array}{r|l} -2 & -1 \\ \hline + & \\ \hline 0 & -1 \\ \hline + & \\ \hline 2 & 1 \end{array}$$



2.  $y = \frac{3}{2}(x + 4)^2 - 7$

a) Transformations from parent function  $y = x^2$ :

Vert stretch  $\frac{3}{2}$ , Left 4 Down 7

A.O.S.: \_\_\_\_\_

Vertex: \_\_\_\_\_

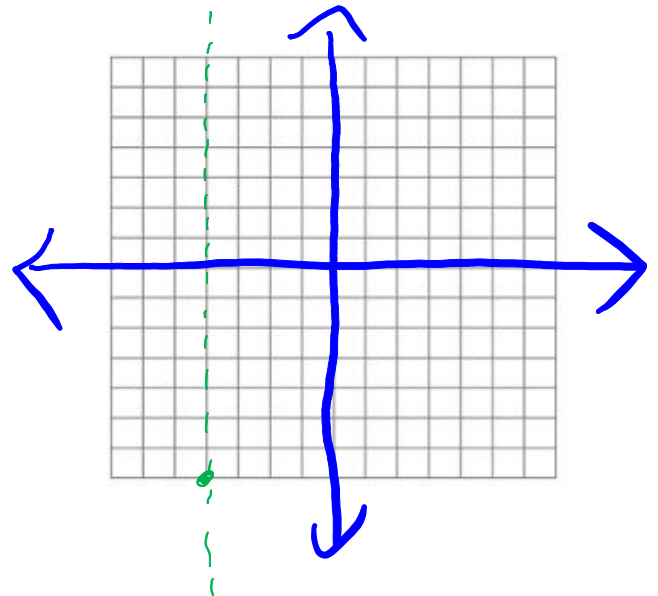
Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Increasing Interval: \_\_\_\_\_

Decreasing Interval: \_\_\_\_\_

End Behavior: \_\_\_\_\_



3.  $y = \frac{5}{x+7} - 1$

a) Transformations from parent function  $y = \frac{5}{x}$ :

\_\_\_\_\_

Asymptotes: \_\_\_\_\_

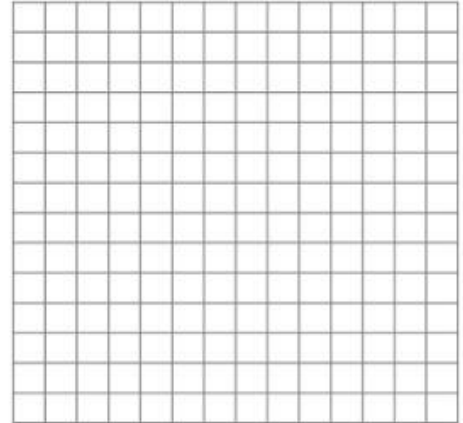
Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Increasing Interval: \_\_\_\_\_

Decreasing Interval: \_\_\_\_\_

End Behavior: \_\_\_\_\_



4.  $y = -2\sqrt{x+3} + 6$

a) Transformations from parent function  $y = \sqrt{x}$ :

\_\_\_\_\_

Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Increasing Interval: \_\_\_\_\_

Decreasing Interval: \_\_\_\_\_

End Behavior: \_\_\_\_\_



5.  $y = \sqrt[3]{x-2} - 1$

a) Transformations from parent function  $y = \sqrt[3]{x}$ :

\_\_\_\_\_

Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Increasing Interval: \_\_\_\_\_

Decreasing Interval: \_\_\_\_\_

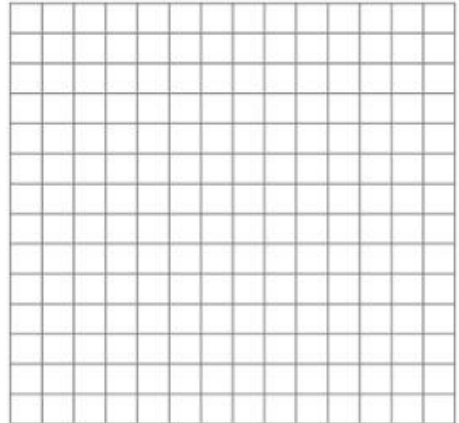
End Behavior: \_\_\_\_\_



For problems 5-7, graph and state a valid solution:

6.  $y > 3(x + 1)^2 - 4$

Valid solution: \_\_\_\_\_



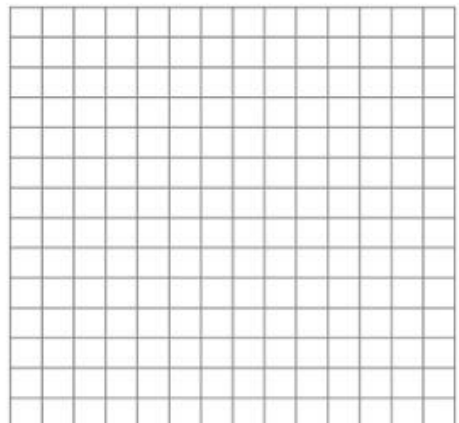
7. 
$$\begin{cases} y < x^2 + 5x \\ y \geq -x^2 + 4x - 7 \end{cases}$$

Valid solution: \_\_\_\_\_



8. 
$$\begin{cases} y \geq x^2 - 3x - 7 \\ y < x - 7 \end{cases}$$

Valid solution: \_\_\_\_\_



9.  $y = \frac{2}{x-3} + 2$

a) Transformations from parent function  $y = \frac{2}{x}$ :

\_\_\_\_\_

Asymptotes: \_\_\_\_\_

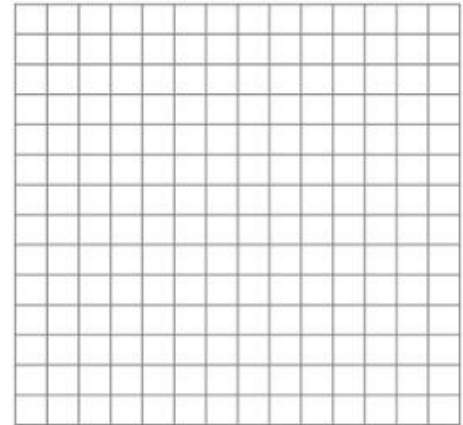
Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Increasing Interval: \_\_\_\_\_

Decreasing Interval: \_\_\_\_\_

End Behavior: \_\_\_\_\_



10. The height,  $h$  meters, of a flare as a function of the time,  $t$  seconds, since the flare was fired from a boat, can be modeled by the function,  $h = -5.25(t - 4)^2 + 6$ .

- a. How many seconds after it was fired did the flare hit the water, to the nearest second?
- b. What is the maximum height the flare reached?