

ALGEBRA 2 HONORS

Name _____

1.6 – UNIT 1 REVIEW

Rewrite each of the following inequalities in interval notation.

1. $x \geq 2$

2. $3 < y \leq 5$

Rewrite each of the following intervals as an inequality.

3. $x \in (-\infty, 1)$

4. $y \in (-\infty, -1] \cup (2, 4)$

Rewrite each of the following collections of values using set notation.

5. $x = -1$ or $x = 2$

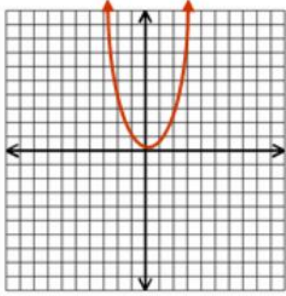
6. $x = \pm \frac{2}{3}$

Evaluate each of the following expressions.

7. $f(-1)$, given $f(x) = x^2 + 3x - 5$

8. $g(x+h)$, given $g(x) = 3x - 4$

9. Identify the name, equation, domain and range of the following parent function.



10. Graph the parent function $y = \sqrt{x}$.

Sketch the graph of each equation.

11. $g(x) = -2|x-1|$

12. $h(x) = \frac{1}{x+3} + 2$

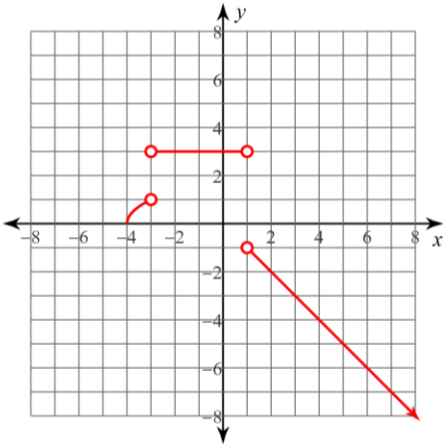
13. $f(x) = (x+1)^2 - 2$

Evaluate the following expressions.

14. $f(-2)$, given $f(x) = \begin{cases} -|x| & x \neq -3 \\ 4 - x^2 & x = -3 \end{cases}$

15. $w(-1)$, given $w(x) = \begin{cases} -|x| & x \leq -4 \\ -x - 4 & -4 < x < 1 \\ -x - 1 & x \geq 1 \end{cases}$

16. Sketch the graph of $g(x) = \begin{cases} \sqrt{x} & x < 2 \\ \frac{2}{x} & x = 2 \\ -x+2 & x > 3 \end{cases}$



17. The graph of $y = f(x)$ is given above. Sketch the graph of $g(x) = -f(x-2)$.

Write the equation of the secant line on the given interval on the given curve.

18. $f(x) = 2x^2 + x + 2$; $x \in [0, 1]$

19. $g(x) = \frac{-1}{x}$; $x \in [1, 3]$

Find the average rate of change of the given function over the given interval.

20. $f(x) = \frac{1}{x+1}$; $x \in [0, 2]$

21. $g(x) = x^2 - x - 1$; $x \in [-1, 2]$