

Name: _____ Date: _____ Period: _____

PIECEWISE FUNCTIONS WITH QUADRATICS WORKSHEET

Carefully graph each of the following. Plot each piece separately. Use T-Charts if needed. Identify the domain and range. Then, evaluate the graph at the specified domain values.

1.
$$f(x) = \begin{cases} 2x+3, & x < -1 \\ |x|-5, & -1 \leq x < 2 \\ 1, & x \geq 3 \end{cases}$$

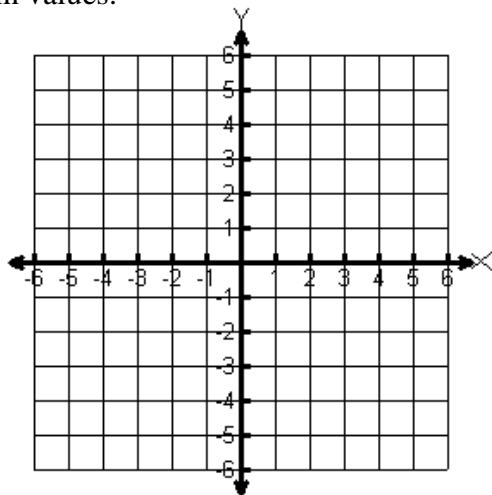
$D_f =$ _____

$R_f =$ _____

evaluate: $f(1) =$ _____

$f(6) =$ _____

$f(0) =$ _____



2.
$$f(x) = \begin{cases} -x, & -4 \leq x < -2 \\ x-3, & -2 \leq x < 1 \\ x^2-2, & x \geq 1 \end{cases}$$

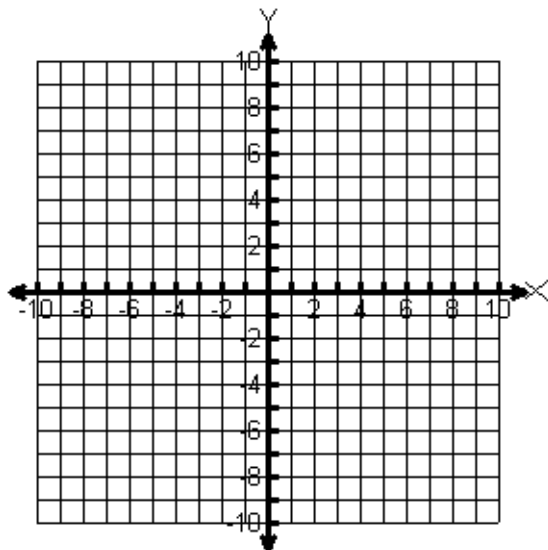
$D_f =$ _____

$R_f =$ _____

evaluate: $f(-4) =$ _____

$f(-2) =$ _____

$f(1) =$ _____



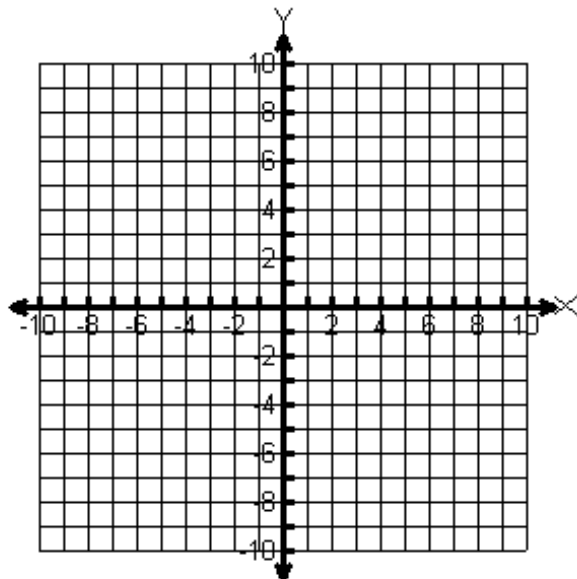
3.
$$f(x) = \begin{cases} 2, & x \geq 5 \\ -2x, & -2 \leq x < 3 \\ 2-x^2, & x < -2 \end{cases}$$

$D_f =$ _____

$R_f =$ _____

evaluate: $f(-2) =$ _____

$f(5) =$ _____



Carefully graph each of the following. Identify whether or not the graph is a function. Then, evaluate the graph at the specified domain value. You may use your calculators to help you graph, but you must sketch it carefully on the grid!

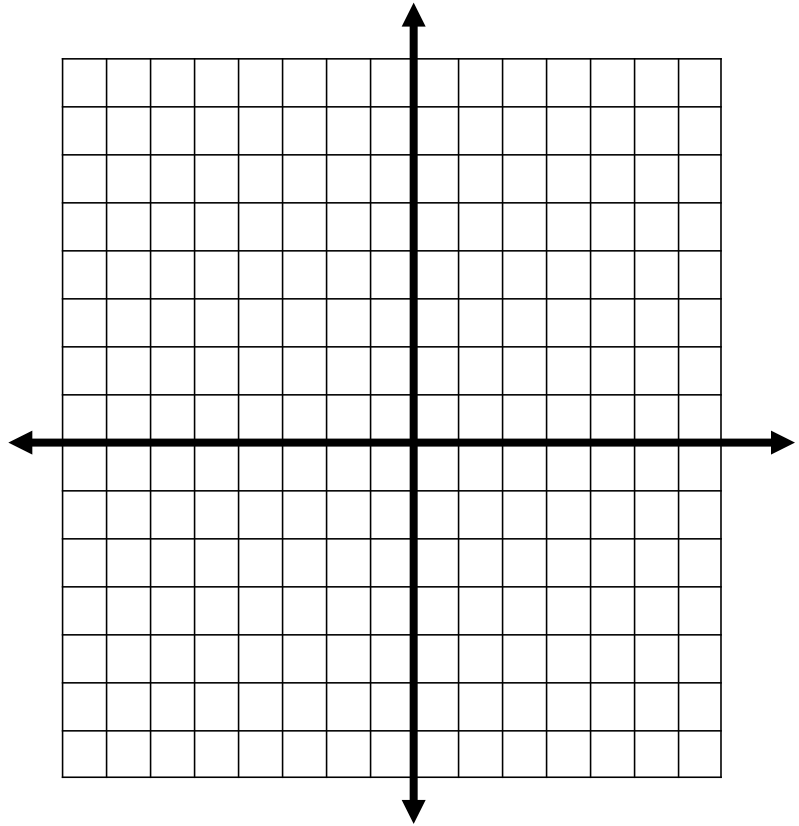
4. $f(x) = \begin{cases} x + 5 & x < -2 \\ x^2 + 2x + 3 & x \geq -2 \end{cases}$

Function? Yes or No

$f(3) =$

$f(-4) =$

$f(-2) =$



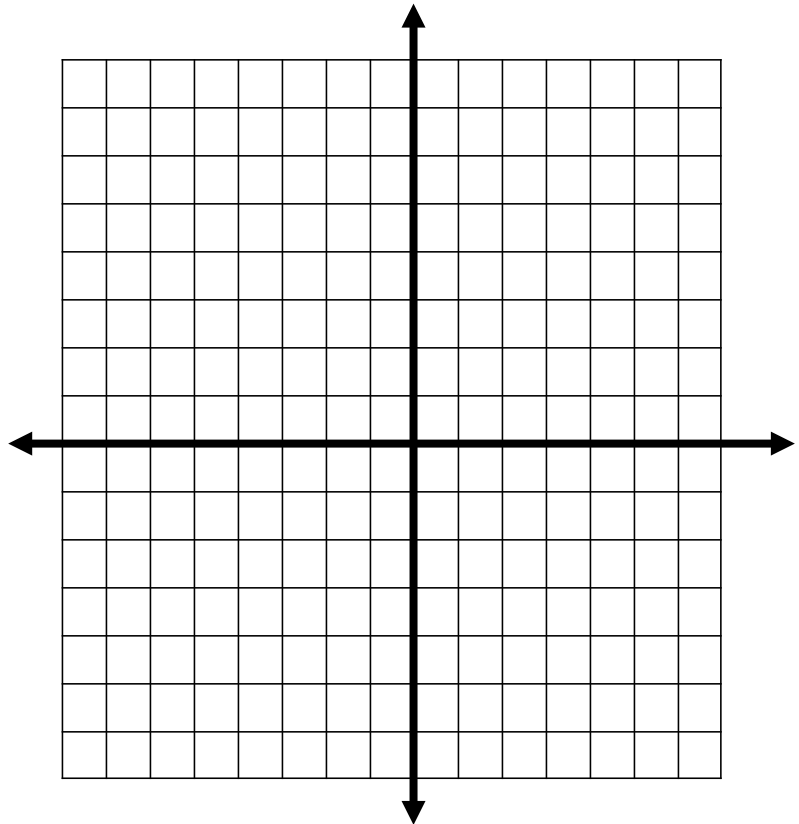
5. $f(x) = \begin{cases} x^2 & x \leq 0 \\ -x^2 + 4 & x > 0 \end{cases}$

Function? Yes or No

$f(-4) =$

$f(0) =$

$f(3) =$



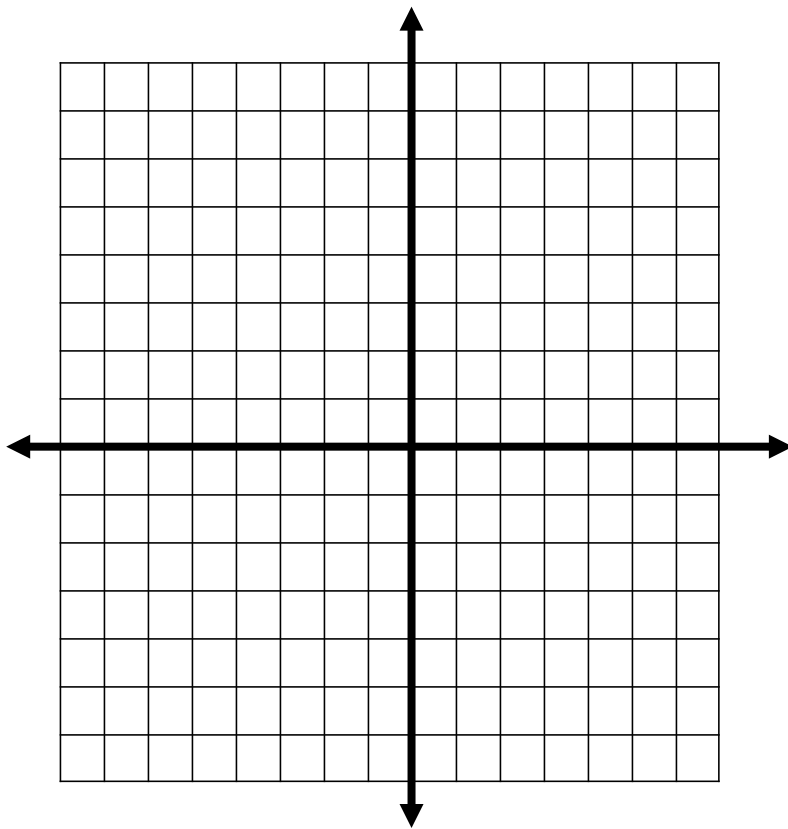
6. $f(x) = \begin{cases} 2x + 1 & x \geq 1 \\ x^2 + 3 & x < 1 \end{cases}$

Function? Yes or No

$f(-2) =$

$f(6) =$

$f(1) =$



7. $f(x) = \begin{cases} x^2 - 1 & x \leq 0 \\ 2x - 1 & 0 < x \leq 5 \\ 3 & x > 5 \end{cases}$

Function? Yes or No

$f(-2) =$

$f(0) =$

$f(5) =$

