

Day 1 - Quadratic Piecewise Functions: Graphing, Writing and Applications

Name _____ Hour _____

Sketch each piecewise function. Find the domain and range for each piecewise function. Then, evaluate the graph at the specified domain value.

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

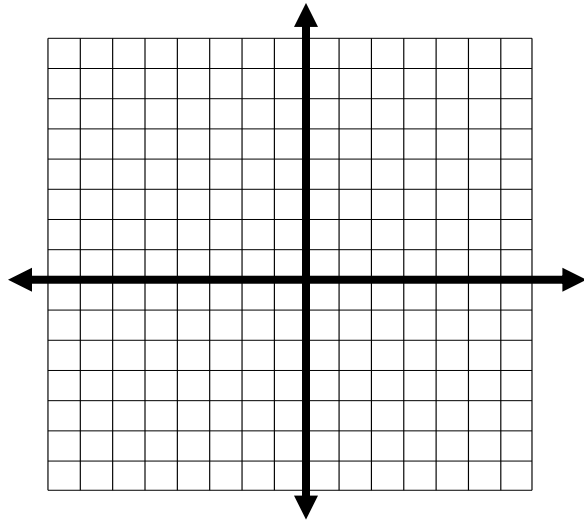
Domain: _____

Range: _____

$f(-2) =$

$f(6) =$

$f(1) =$



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

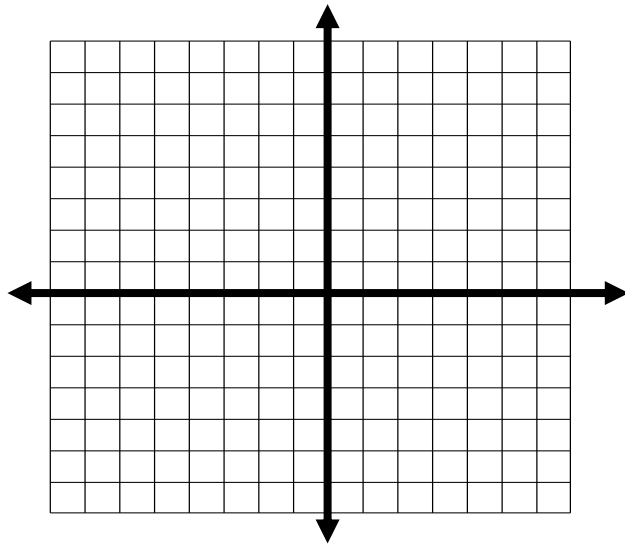
Domain: _____

Range: _____

$f(-2) =$

$f(0) =$

$f(5) =$



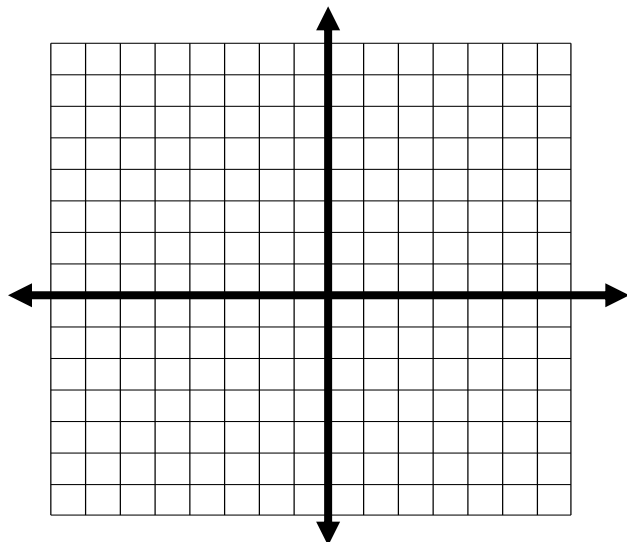
3.
$$f(x) = \begin{cases} (x + 2)^2 & x \leq -1 \\ |x - 1| - 2 & -1 < x \leq 3 \\ -x + 2 & x > 3 \end{cases}$$

Domain: _____

Range: _____

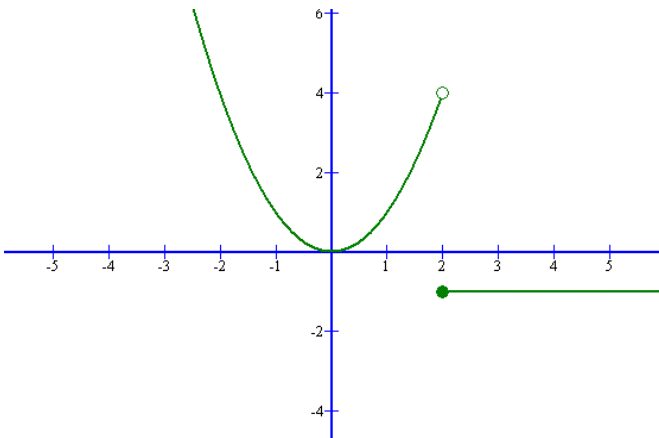
$f(-1) =$

$f(6) =$



Write a piecewise function for each graph and give the domain and range.

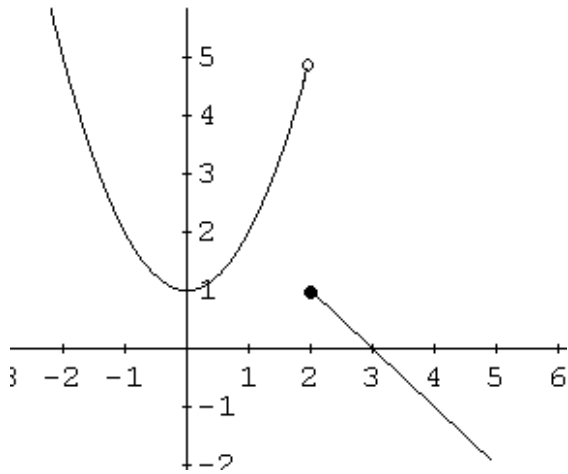
4.



$$f(x) = \left\{ \right.$$

Domain _____ Range _____

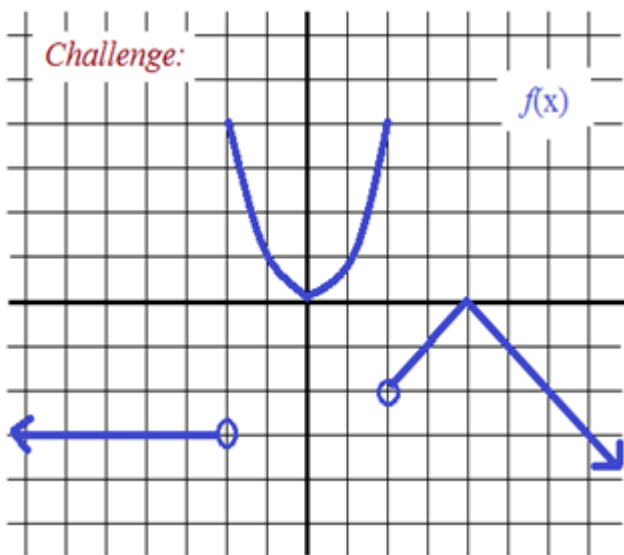
5.



$$f(x) = \left\{ \right.$$

Domain _____ Range _____

6.

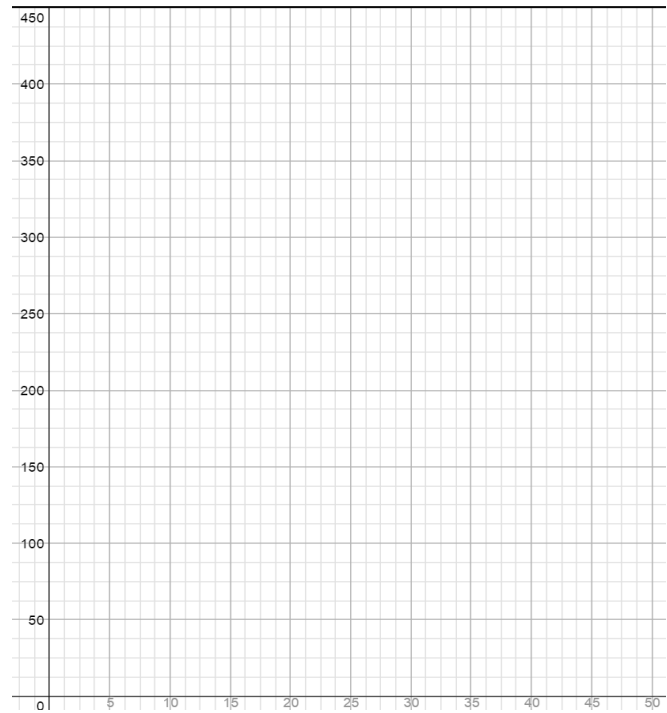


$$f(x) = \left\{ \right.$$

Domain _____ Range _____

7. Buddy delivers mail to the elves for \$10.00 per hour, but he get overtime for every hour over 40 hours. The overtime is time and a half, so he gets paid \$15.00 per hour for overtime. Fill in the table and graph the values. Then create a piecewise function that tracks the hours he works(x-values) to the money makes(y-values).

X(hours)	Y(money)
10	
20	
30	
40	
50	
60	
70	



$$f(x) = \{$$