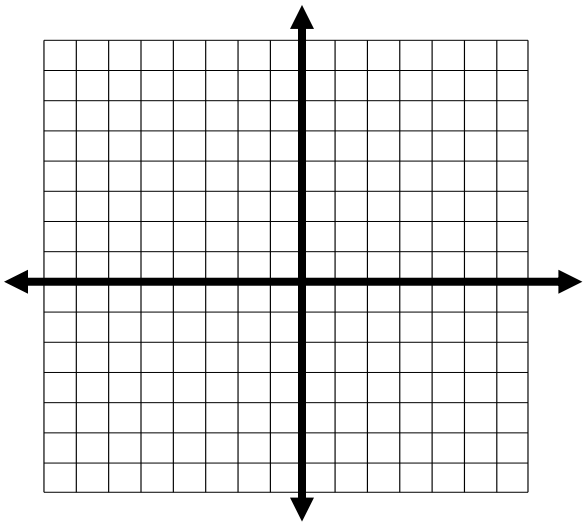
# Day 2 - Quadratic Piecewise Functions: Graphing, Writing and Applications

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



Domain:_____

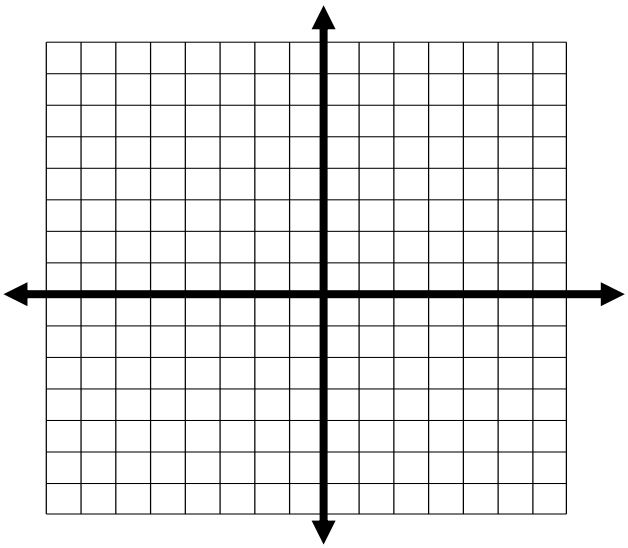
Range:_____

$f(-3)=$

$f(0)=$

$f(2)=$

2. $f(x)=\begin{cases}-(x+3)^2 & x<-1\\ \frac{1}{2}x-4 & -1\leq x\leq 2\\ -5 & x>2\end{cases}$



Domain:_____

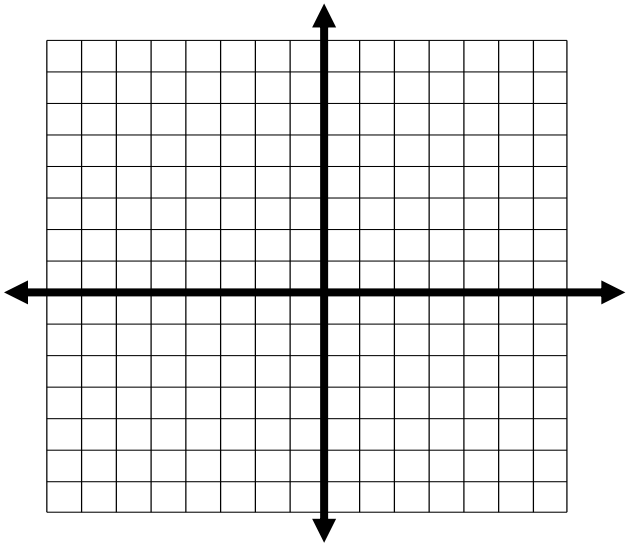
Range:_____

$f(-2)=$

$f(2)=$

$f(4)=$

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



Domain:_____

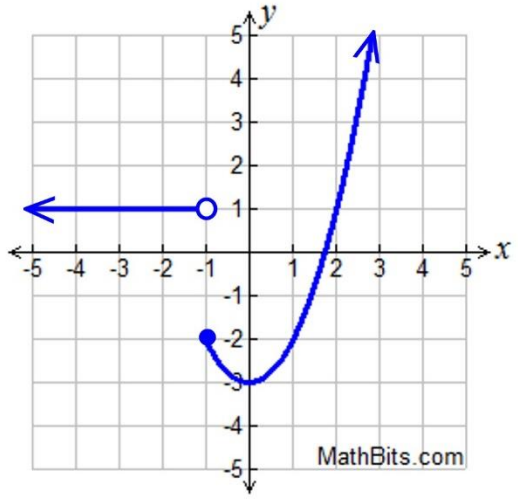
Range:_____

$f(-2)=$

$f(3)=$

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

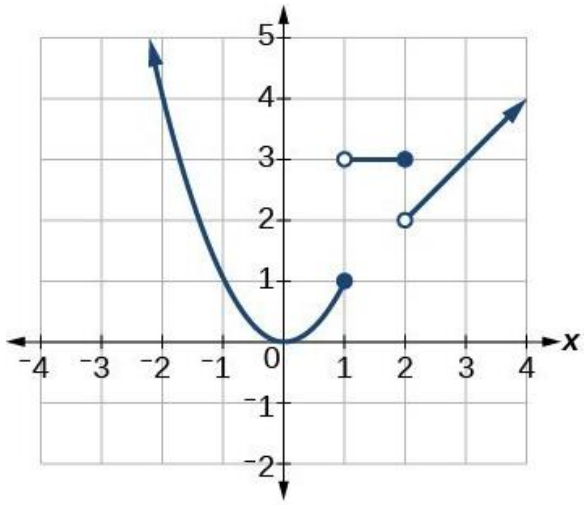
4.




$$f(x) = \begin{cases} \\ \\ \end{cases}$$

**Domain**_____ **Range**_____

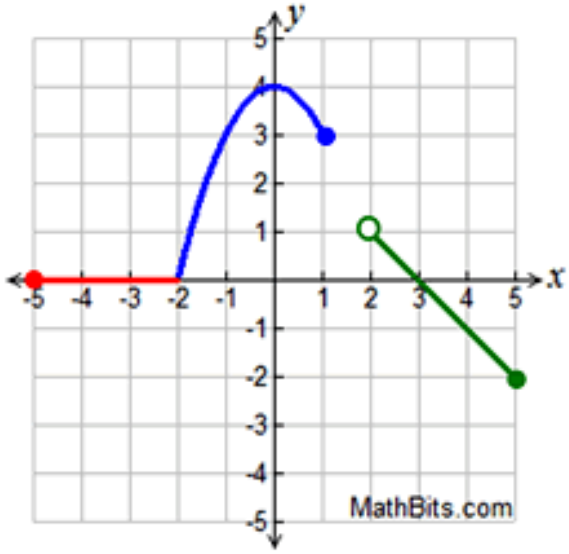
5.




$$f(x) = \begin{cases} \\ \\ \end{cases}$$

**Domain**_____ **Range**_____

6.



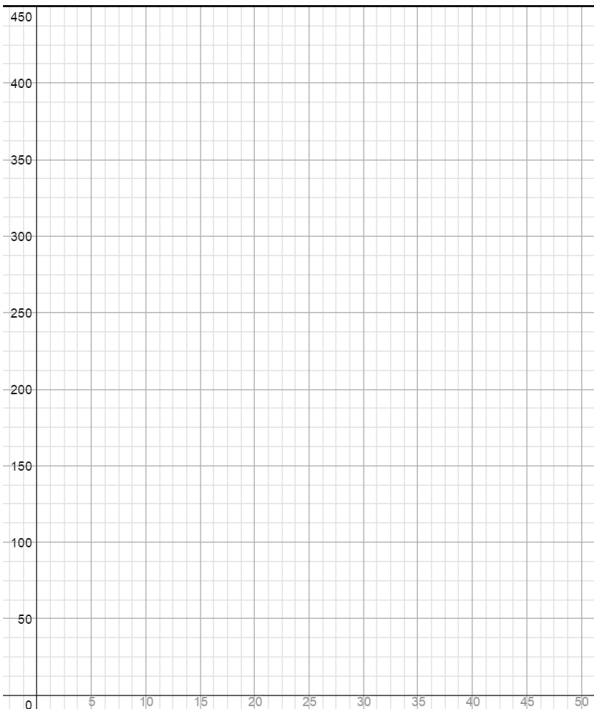

$$f(x) = \begin{cases} \\ \\ \end{cases}$$

**Domain**_____ **Range**_____

7. You have a summer job that pays time and a half for overtime. (i.e. if you work more than 40 hours). After that it is 1.5 times your hourly rate of $7.00/hr.

a. Write a piecewise function that gives your weekly pay P in terms of the number of hours you worked h.

b. Graph your piecewise function.




c. How much will you make if you work 45 hours?