

Bell Ringer

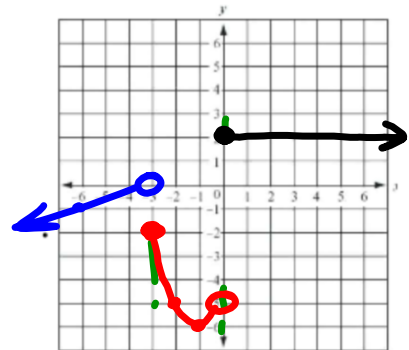
Thursday 10/31

Graph the piecewise function.

$$f(x) = \begin{cases} \frac{1}{3}x + 1, & x < -3 \\ (x + 1)^2 - 6, & -3 \leq x < 0 \\ 2, & x \geq 0 \end{cases}$$

Evaluate $f(-1) = -6$

Evaluate $f(0) = 2$



3.7 online hw due today!
Quadratic Piecewise Functions
Day 1 ws due tomorrow :)

WHITEBOARDS

Given the piecewise function:

$$f(x) = \begin{cases} 7, & x < -2 \\ x^2 - 4, & -2 \leq x < 1 \\ x + 2, & x \geq 1 \end{cases}$$

Evaluate $f(0) = -4$

Evaluate $f(1) = 3$

Given the piecewise function:

$$f(x) = \begin{cases} 7, & -x < -2 \\ (-x)^2 - 4, & -2 \leq -x < 3 \\ x + 2, & x \geq 3 \end{cases}$$

Evaluate $f(-5) = 7$

Evaluate $f(-2) = 0$

Given the piecewise function:

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

Evaluate $f(0) =$ |

Evaluate $f(3) =$ |

Given the piecewise function:

$$f(x) = \begin{cases} 4, & -7 < -2 \\ x^2 + 1, & -2 \leq x < 1 \\ 2x - 5, & x \geq 1 \end{cases}$$

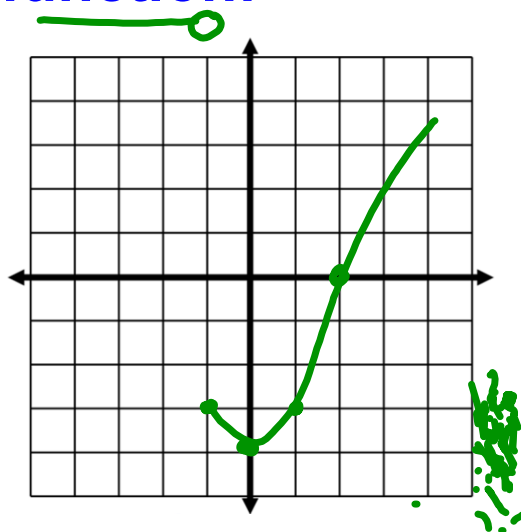
Evaluate $f(1) = -3$

Evaluate $f(-7) = 4$

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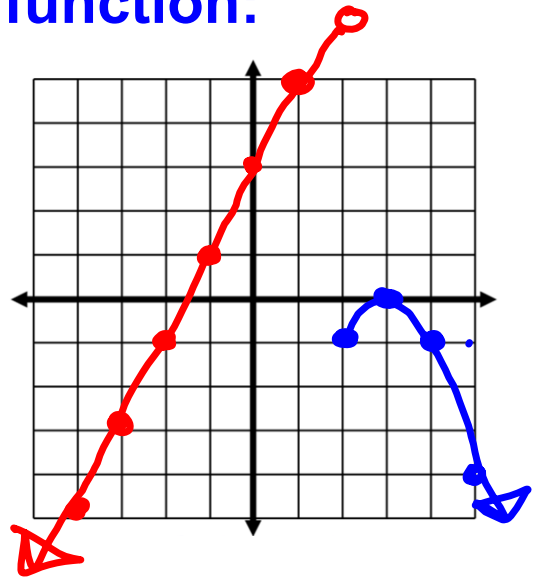
Graph the piecewise function:

$$f(x) = \begin{cases} 7, & x < -1 \\ x^2 - 4, & x \geq -1 \end{cases}$$



Graph the piecewise function:

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

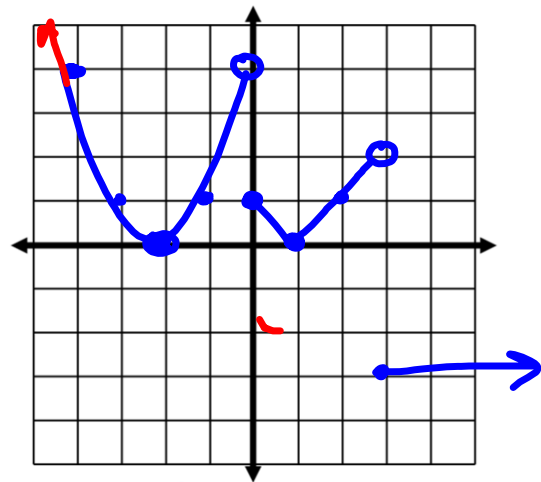


Graph the piecewise function:

$$f(x) = \begin{cases} (x + 2)^2, & x < 0 \\ |x - 1|, & 0 \leq x < 3 \\ -3, & x \geq 3 \end{cases}$$

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

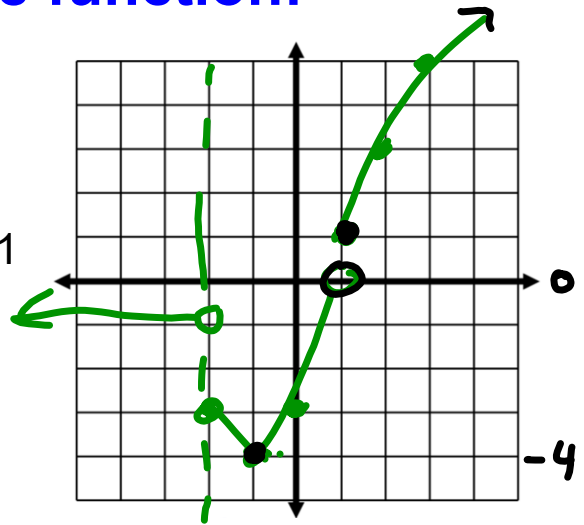
$$R: [-3] \cup [0, \infty)$$



Graph the piecewise function:

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

$$\begin{aligned} D: & (-\infty, \infty) \\ R: & (-4, 0) \cup [1, \infty) \end{aligned}$$



due Monday - Skip #7

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

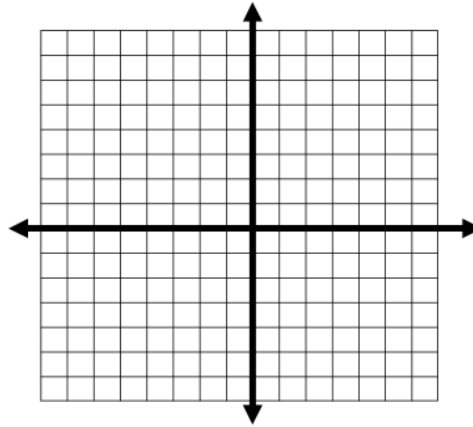
Domain: _____

Range: _____

$f(-3) =$

$f(0) =$

$f(2) =$



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

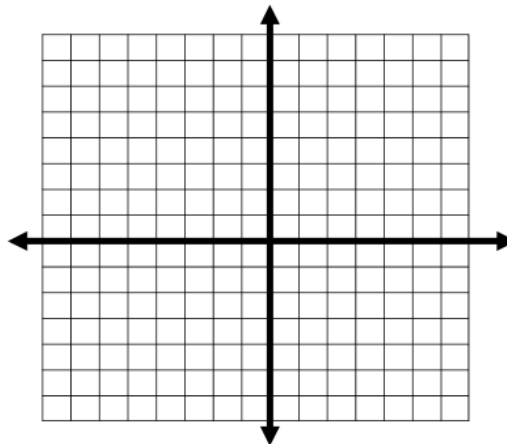
Domain: _____

Range: _____

$f(-2) =$

$f(2) =$

$f(4) =$



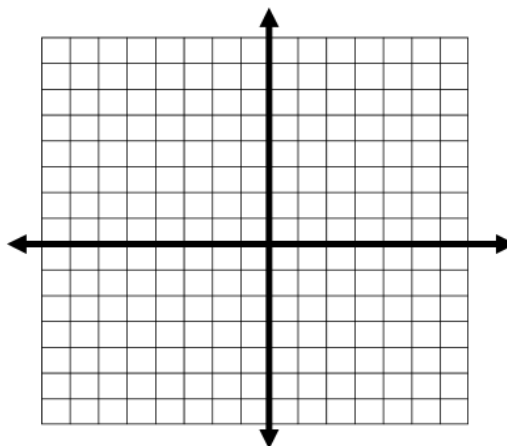
3.
$$f(x) = \begin{cases} |x+4| + 3 & x < -2 \\ \frac{1}{2}x^2 + 1 & -2 \leq x < 3 \\ x + 4 & x \geq 3 \end{cases}$$

Domain: _____

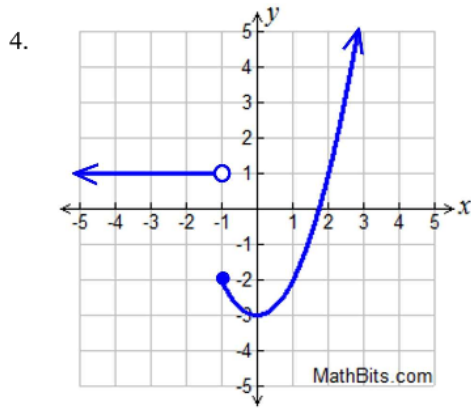
Range: _____

$f(-2) =$

$f(3) =$

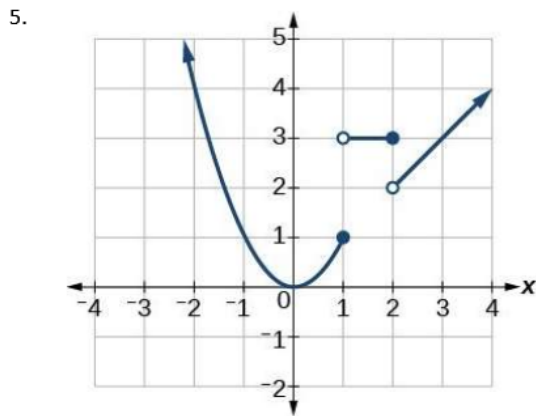


Write a piecewise function for each graph and give the domain and range.



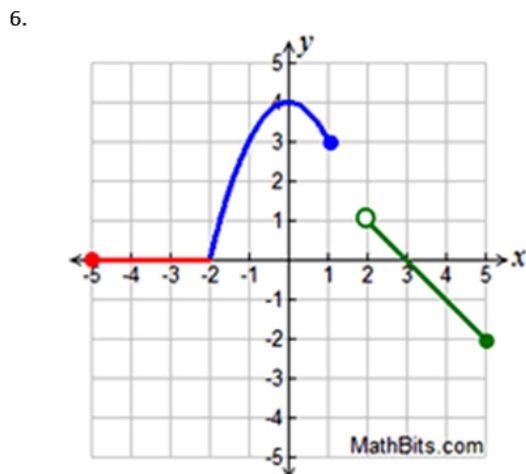
$$f(x) = \left\{ \right.$$

Domain _____ Range _____



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

Domain _____ Range _____



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

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?

