Spiral Review:

Complete the square.

1. $x^2 - 4x$ _____

2. $x^2 + 5x$ _____

3. $4x^2 - 8x$ _____

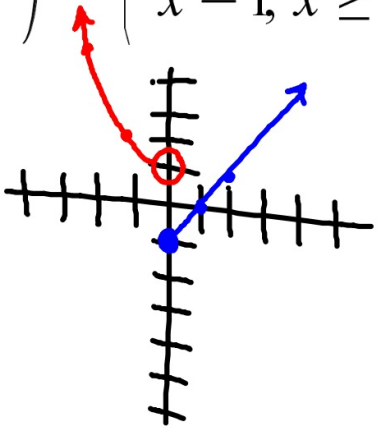
4. $3x^2 + 6x$ _____

Piece-Wise Functions:

Students will be able to graph piece-wise functions and evaluate.

A function defined by two or more equations over a specified domain is called a piece-wise function.

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



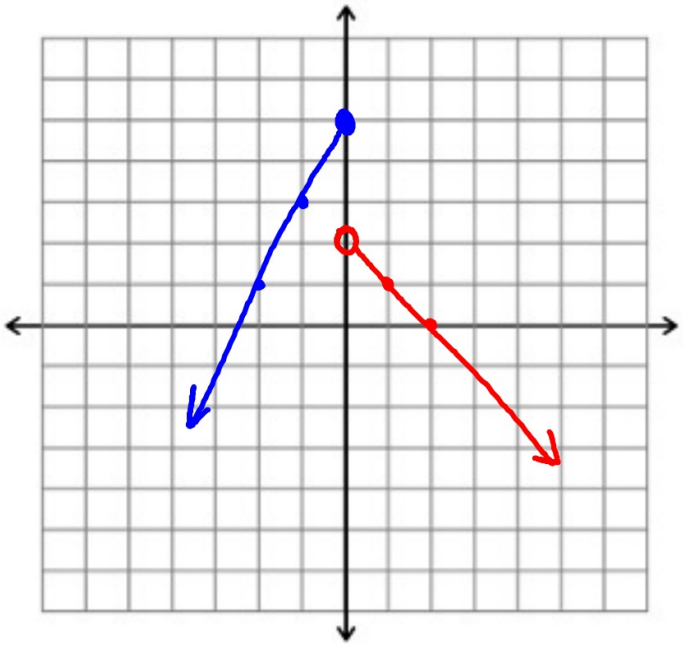
To Graph:

1.) Start with the number given in the condition, plug in to function to get point.
2.) Determine whether the point is open or closed.
3.) Choose two more points based on condition and plot on graph.
4.) Repeat for other functions

Students will be able to graph piece-wise functions and evaluate.

Example 1: Graph the function and evaluate.

$$f(x) = \begin{cases} 2x + 5, & x \le 0 \\ 2 - x, & x > 0 \end{cases}$$



a.) f(-2) = 1

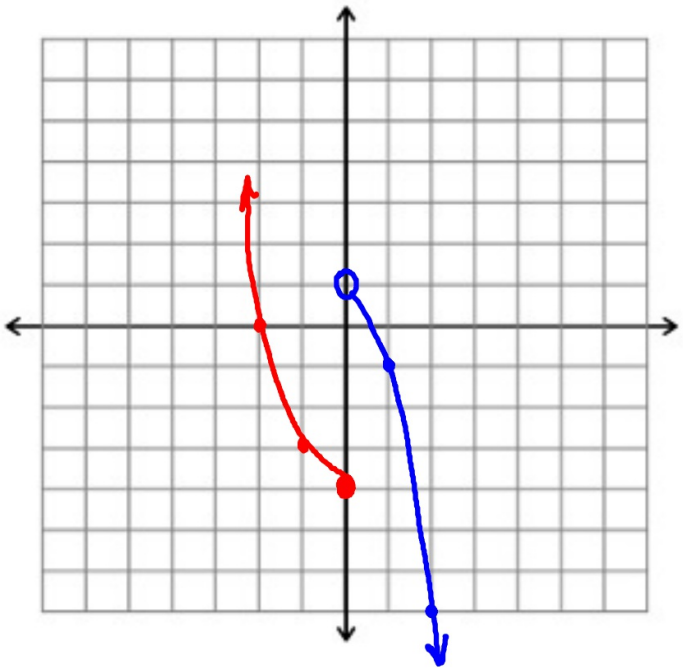
b.) f(0) = 5

c.) f(2) = 0

Students will be able to graph piece-wise functions and evaluate.

Example 2: Graph the function and evaluate.

$$f(x) = \begin{cases} x^2 - 4, & x \le 0 \\ 1 - 2x^2, & x > 0 \end{cases}$$



a.) f(-2) = 0

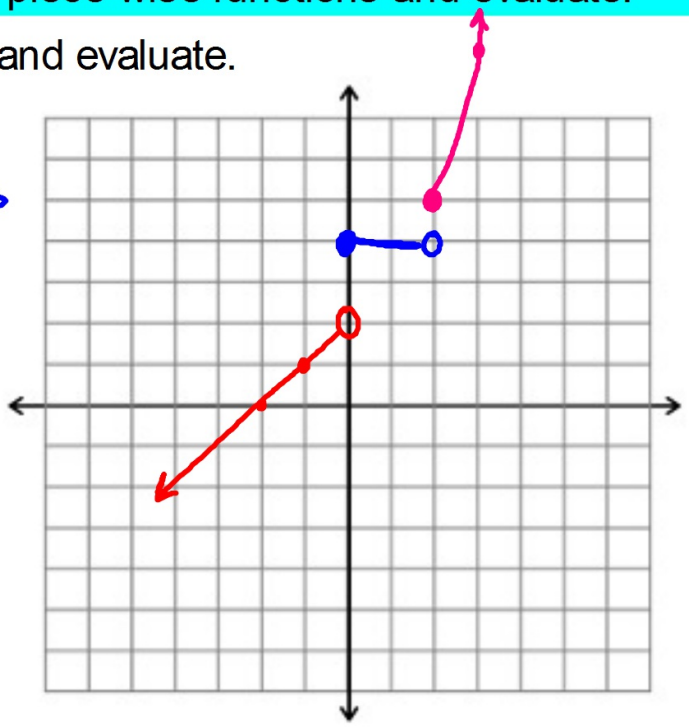
b.) f(0) = -4

c.) f(1) = -1

Students will be able to graph piece-wise functions and evaluate.

Example 3: Graph the function and evaluate.

$$f(x) = \begin{cases} x+2, & x<0 \\ 4, & 0 \le x < 2 \\ x^2+1, & x \ge 2 \end{cases}$$



a.) f(-2) = 0

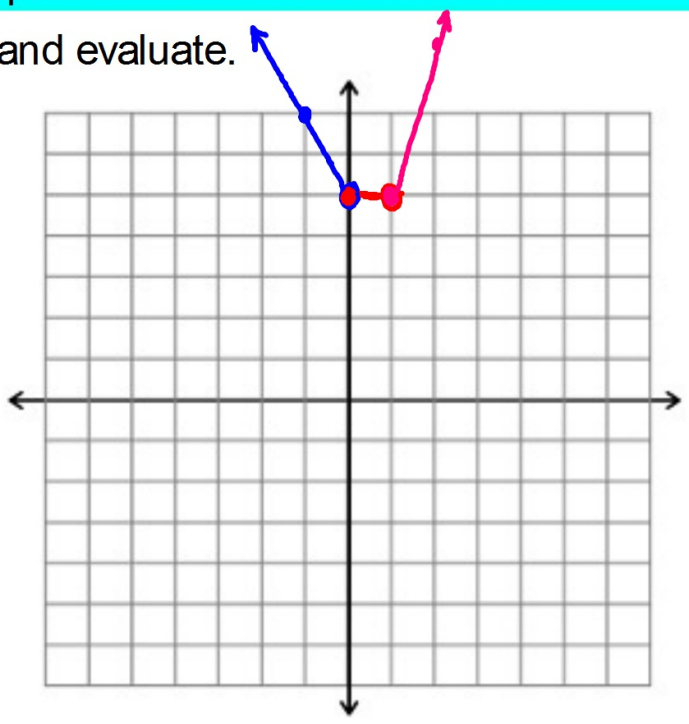
b.) f(0) = 4

c.) f(2) = 5

Students will be able to graph piece-wise functions and evaluate.

Example 4: Graph the function and evaluate.

$$f(x) = \begin{cases} 5-2x, & x<0 \\ 5, & 0 \le x < 1 \\ 4x+1, & x \ge 1 \end{cases}$$



a.) f(-4) = 13

b.) f(0) = 5

c.) f(1) = 5

Turn-in:
p. 38 (55, 59)

HW:
worksheet over Piece-Wise Functions