

Today's Plan:

Learning Target (standard): I will evaluate and graph piecewise functions. I will determine their domain and range. I will calculate the average rate of change for functions. I will describe properties of functions.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, and solve practice quiz problems.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide practice quiz problems.

Assessment: Board work, homework check and practice quiz

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in practice quiz problems.

Part One: p.134 #2-20 even

* Quiz will be Monday *

2) A 10a) $D : \{x \mid -2 \leq x \leq 3\}$

12a) $D : \{x \mid x > 0\}$

4) G $R : \{y \mid -1 \leq y \leq 3\}$

$R : \mathbb{R}$

6) D b) increasing : $(-2, 0), (1, 3)$

b) increasing : $(0, \infty)$

8) H decreasing : $(0, 1)$

c) neither

c) neither

d) $I_x : (1, 0)$

d) $I_x : (-1, 1), I_y : (0, 2)$

Part One: p.134 #2-20 even

* Quiz will be on Monday *

14a) $D: \left\{ x \mid -\frac{\pi}{2} < x < \frac{\pi}{2} \right\}$

$R: \mathbb{R}$

b) *increasing* : $\left(-\frac{\pi}{2}, \frac{\pi}{2} \right)$

c) *odd*

d) $I_x: (0,0), I_y: (0,0)$

16a) $D: \{x \mid x \neq -1\}$

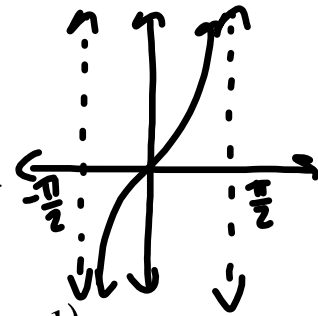
$R: \{y \mid y > 0\}$

b) *increasing* : $(-\infty, -1)$

decreasing : $(-1, \infty)$

c) *neither*

d) $I_y: (0,2)$



Part One: p.134 #2-20 even

* Quiz will be on Monday *

18a) $D: \{x \mid x \neq 0\}$

$R: \{y \mid y \leq -2, y \geq 2\}$

b) *increasing* : $(-1,0), (0,1)$

decreasing : $(-\infty, -1), (1, \infty)$

c) *odd*

d) $I_x: -, I_y: -$

20a) $D: \{x \mid x \neq -1, 1\}$

$R: \mathbb{R}$

b) *increasing* : $(-\infty, -1), (-1, 1), (1, \infty)$

c) *odd*

d) $I_x: (0,0); I_y: (0,0)$

Part Two: p.136 #40-50 even

* Quiz will be on Monday *

40) even

48) odd

$$f(-x) = f(x)$$

even

42) neither

50) odd

$$f(-x) = -f(x)$$

odd

44) neither

46) even

Even/Odd/Neither?

$$f(x) = |x|$$

$$f(-x) = |-x|$$

$$f(-x) = |x|$$

$$\therefore \text{even}$$
$$f(-x) = f(x)$$

Even/Odd/Neither?

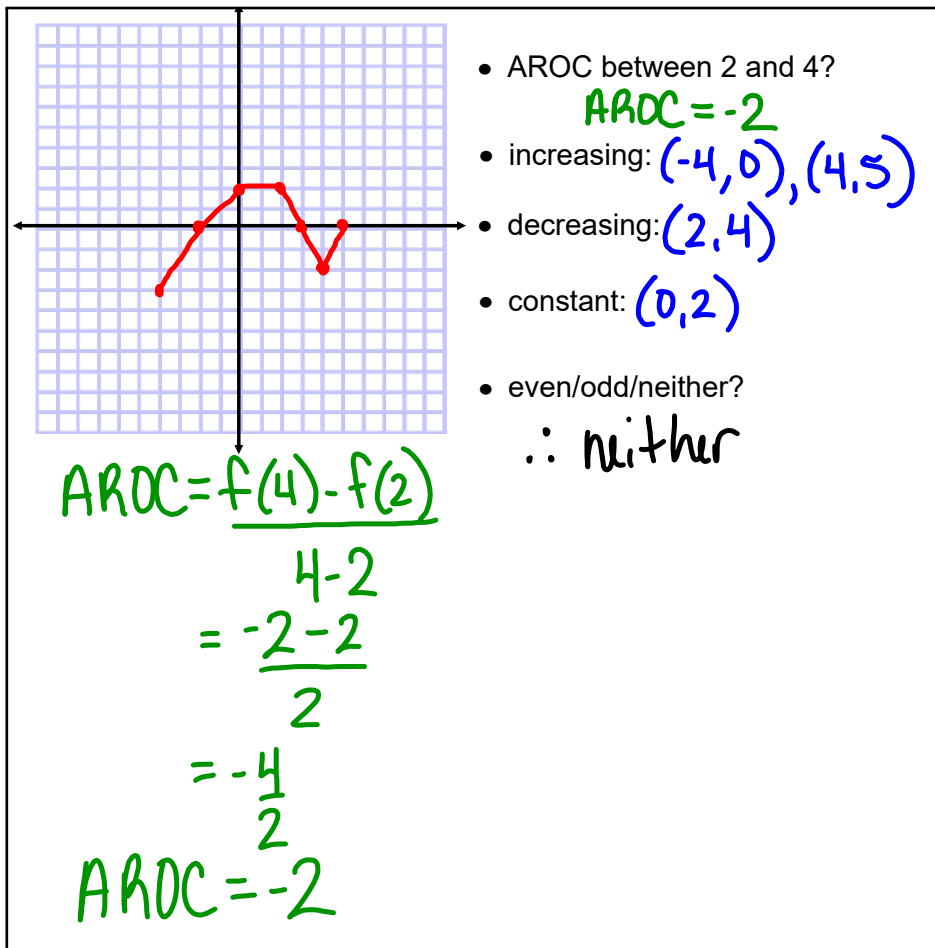
$$f(x) = 3x^3 - 4x$$

$$f(-x) = 3(-x)^3 - 4(-x)$$

$$f(-x) = -3x^3 + 4x$$

$$\therefore \text{odd}$$

$$f(-x) = -f(x)$$



$$f(x) = 2x + 5$$

$$a) f(-x) = 2(-x) + 5$$

$$f(-x) = -2x + 5$$

$$b) -f(x) = -1(2x + 5)$$

$$-f(x) = -2x - 5$$

$$f(x) = 2x + 5$$

$$c) f(2x) = 2(2x) + 5$$

$$f(2x) = 4x + 5$$

$$d) f(x-3) = 2(x-3) + 5$$

$$= 2x - 6 + 5$$

$$f(x-3) = 2x - 1$$

$$f(x) = 2x + 5$$

$$e) f\left(\frac{1}{x}\right) = 2\left(\frac{1}{x}\right) + 5$$

$$f\left(\frac{1}{x}\right) = \frac{2}{x} + 5$$

$$= \frac{2}{x} + \frac{5x}{x}$$

$$f\left(\frac{1}{x}\right) = \frac{5x+2}{x}$$

$$f) \frac{1}{f(x)} = \frac{1}{2x+5}$$

Find the domain.

$$f(x) = \frac{3-x}{\sqrt{x^2-5x+6}}$$

$$x^2 - 5x + 6 > 0$$

$$(x-3)(x-2) > 0$$

$$x-3$$

—

⋮

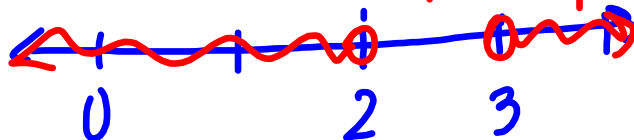
$$- \quad 0 \quad +$$

$$x-2$$

—

⋮

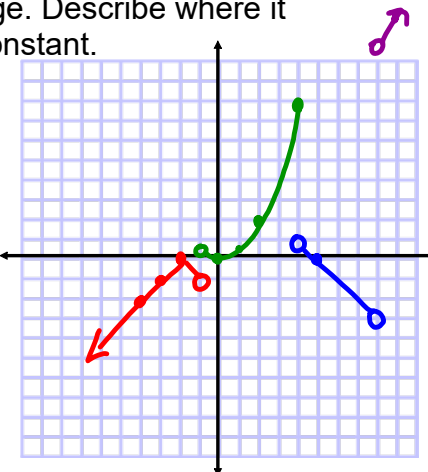
$$0 \quad + \quad \cdot \quad +$$



$$D: \{x \mid x < 2, x > 3\}$$


Graph and find domain and range. Describe where it is increasing, decreasing and constant.

$x+2=0$
 $x=-2$

$$f(x) = \begin{cases} -|x+2| & x < -1 \\ \frac{1}{2}x^2 & -1 < x \leq 4 \\ 5-x & 4 < x < 8 \\ 2x-5 & x > 8 \end{cases}$$


D: $\{x \mid x \neq -1, 8\}$

R: $\{y \mid y \leq 8, y > 11\}$



Increasing: $(-\infty, -2), (0, 4), (8, \infty)$

Constant: —

Decreasing: $(-2, -1), (-1, 0), (4, 8)$

Assignment: * Quiz Monday *

Part One: p.116 #19,33,43,47,61

Part Two: p.134

#11,15,19,29,33,35,41,45,49,65

* Be sure to write the problem/draw the graph and show ALL work with correct notation. Check answers in the back of the book!*