

Tues GrHW 1 Due & mini quiz (5 quizzes = 1 test grade)

Wed OCC Registration deadline

Wed Open House 6-8pm

Tues 9/24 1st Math League Meeting in LGR 2:30pm

Sep 15-8:52 PM

Pg 130

2. a. increasing $\rightarrow (1, 3)$
b. decreasing $\rightarrow (-5, 1)$
c. constant $\rightarrow (3, 5)$

4. a. increasing $\rightarrow (1, 2)$
b. decreasing $\rightarrow (-5, -2), (-2, 1), (3, 5)$
c. constant $\rightarrow (2, 3)$

6. a. increasing $\rightarrow (1, 4) 1 < x < 4$
b. decreasing $\rightarrow (-1, 1), (4, \infty)$
c. constant $\rightarrow (-\infty, -1)$

8. D: $\{x | -5 \leq x \leq 5\}$ or $[-5, 5]$
R: $\{y | 1 \leq y \leq 4\}$ or $[1, 4]$

10. D: $\{x | -5 \leq x \leq 5\}$ or $[-5, 5]$
R: $\{y | 1 \leq y \leq 3\}$ or $[1, 3]$

12. D: $\{x | x \in \mathbb{R}\}$ or $(-\infty, \infty)$
R: $\{y | y \leq 11\}$ or $(-\infty, 11]$

14. rel min $\rightarrow 2$ @ $x = 1$
increasing $\rightarrow (1, \infty)$
decreasing $\rightarrow (-\infty, 1)$

16. rel min $\rightarrow .995$ @ $x = 1.03$
rel max $\rightarrow 2.921$ @ $x = 3.601$
increasing $\rightarrow (1.03, 3.601)$
decreasing $\rightarrow (-\infty, 1.03), (3.601, \infty)$

18. rel max $\rightarrow 4$ @ $x = 0$
increasing $\rightarrow (-\infty, 0)$
decreasing $\rightarrow (0, \infty)$

C1 Ditto 2:

1. point slope: $y - 6 = -5(x - 2)$ or $y + 4 = -5(x - 4)$
slope-int: $y = -5x + 16$
standard: $5x + y - 16 = 0$

2. $y + 4 = -1/4(x - 5)$

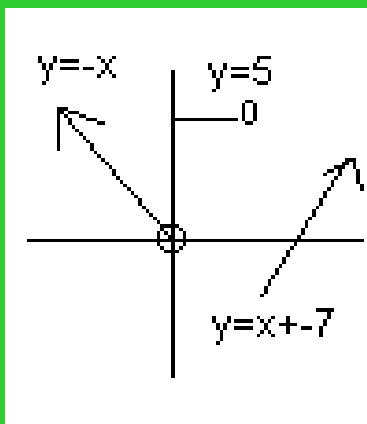
20. rel min $\rightarrow -5$ @ $x = -3$
increasing $\rightarrow (-3, \infty)$
decreasing $\rightarrow (-\infty, -3)$

28. $N(a) = -a^2 + 300a + 6, 0 \leq a \leq 300$
rel max $\rightarrow 22606$ @ 150
for \$150000 ~~22506~~ 22506 games will be sold

30. $f(x) = -\frac{4}{x^2 + 1}$
increasing $\rightarrow (0, \infty)$
decreasing $\rightarrow (-\infty, 0)$

Sep 8-7:40 PM

Piece-Wise Functions are functions defined to use different output formulas for different parts of the domain.



Sep 8-4:36 PM

$$f(x) = \begin{cases} |x| - 5 & \text{if } -1 \leq x < 2 \\ x^2 & \text{if } x \geq 2 \end{cases}$$

Find domain of $f(x)$ $[-1, \infty)$ or $\{x | x \geq -1\}$

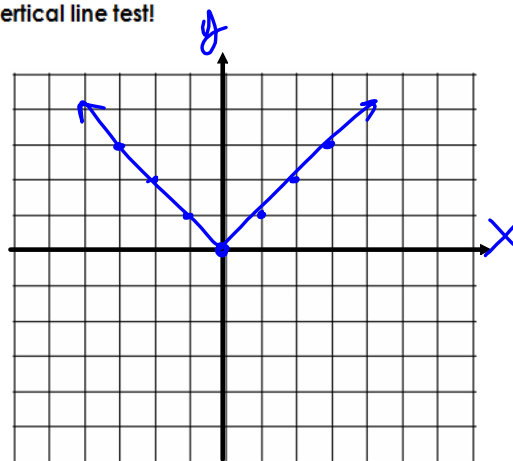
Find: $f(-1) = |-1| - 5 = 1 - 5 = -4$ $f(1) = |1| - 5 = 1 - 5 = -4$ $f(2.5) = (2.5)^2 = 6.25$

Sep 8-7:43 PM

Graph each of the following: *Your function MUST pass the vertical line test!

$$f(x) = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

$f(x) = x$		$f(x) = -x$	
x	y	x	y
0	0	0	0
1	1	-1	1
2	2	-2	2
3	3	-3	3



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$$g(x) = \begin{cases} x-1 & \text{if } x < 0 \\ x^2 - 2x & \text{if } 0 \leq x \leq 3 \\ x & \text{if } x > 3 \end{cases}$$

$$g(x) = x - 1$$

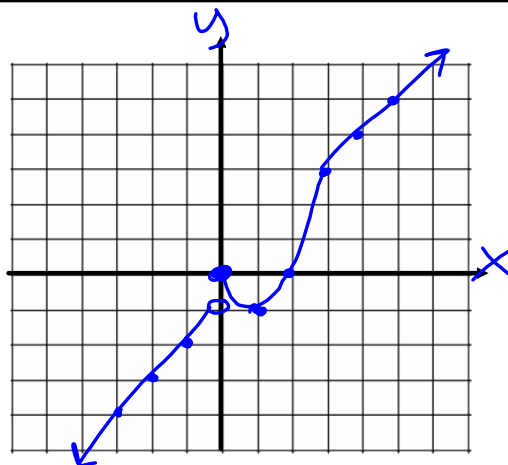
x	0	-1	-2	-3
y	-1	-2	-3	-4

$$g(x) = x^2 - 2x$$

x	0	1	2	3
y	0	-1	0	3

$$g(x) = x$$

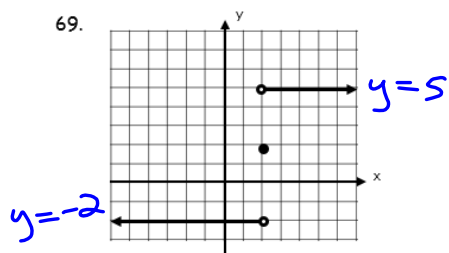
x	3	4	5
y	3	4	5



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Do from text: pg 134: find the domain & range; write an equation for the function.

69.



D: $\{x | x \in \mathbb{R}\}$ or $(-\infty, \infty)$

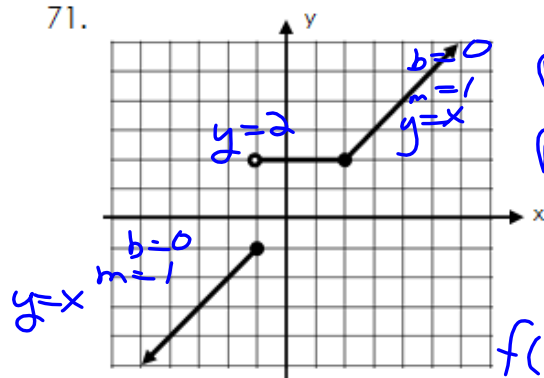
R: $\{-2, 2, 5\}$

$$f(x) = \begin{cases} -2 & \text{if } x < 2 \\ 2 & \text{if } x = 2 \\ 5 & \text{if } x > 2 \end{cases}$$

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Do from text: pg 134: find the domain & range; write an equation for the function.

71.



D: $\{x | x \in \mathbb{R}\}$

R: $\{y | y \leq -1 \text{ or } y \geq 2\}$

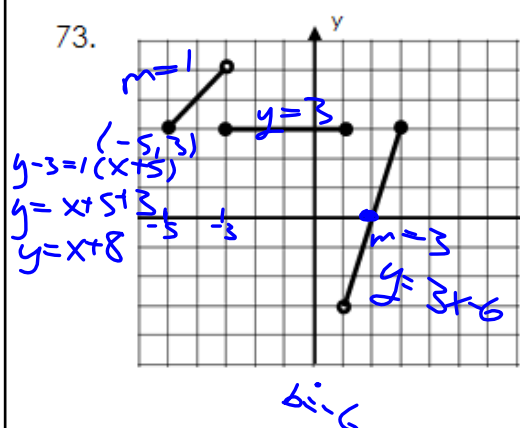
$(-\infty, -1] \cup [2, \infty)$

$$f(x) = \begin{cases} x & \text{if } x \leq -1 \\ 2 & \text{if } -1 < x \leq 2 \\ x & \text{if } x > 2 \end{cases}$$

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Do from text: pg 134: find the domain & range; write an equation for the function.

73.



$$D: \{x | -5 \leq x \leq 3\} \quad [-5, +3]$$

$$R: \{y | -3 < y < 5\} \quad (-3, 5)$$

$$f(x) = \begin{cases} x+8 & \text{if } -5 \leq x < -3 \\ 5 & \text{if } -3 \leq x \leq 1 \\ 3x-6 & \text{if } 1 < x \leq 3 \end{cases}$$

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Homework:

pp. 133 - 134 # 50, 52, 54 (on graph paper)

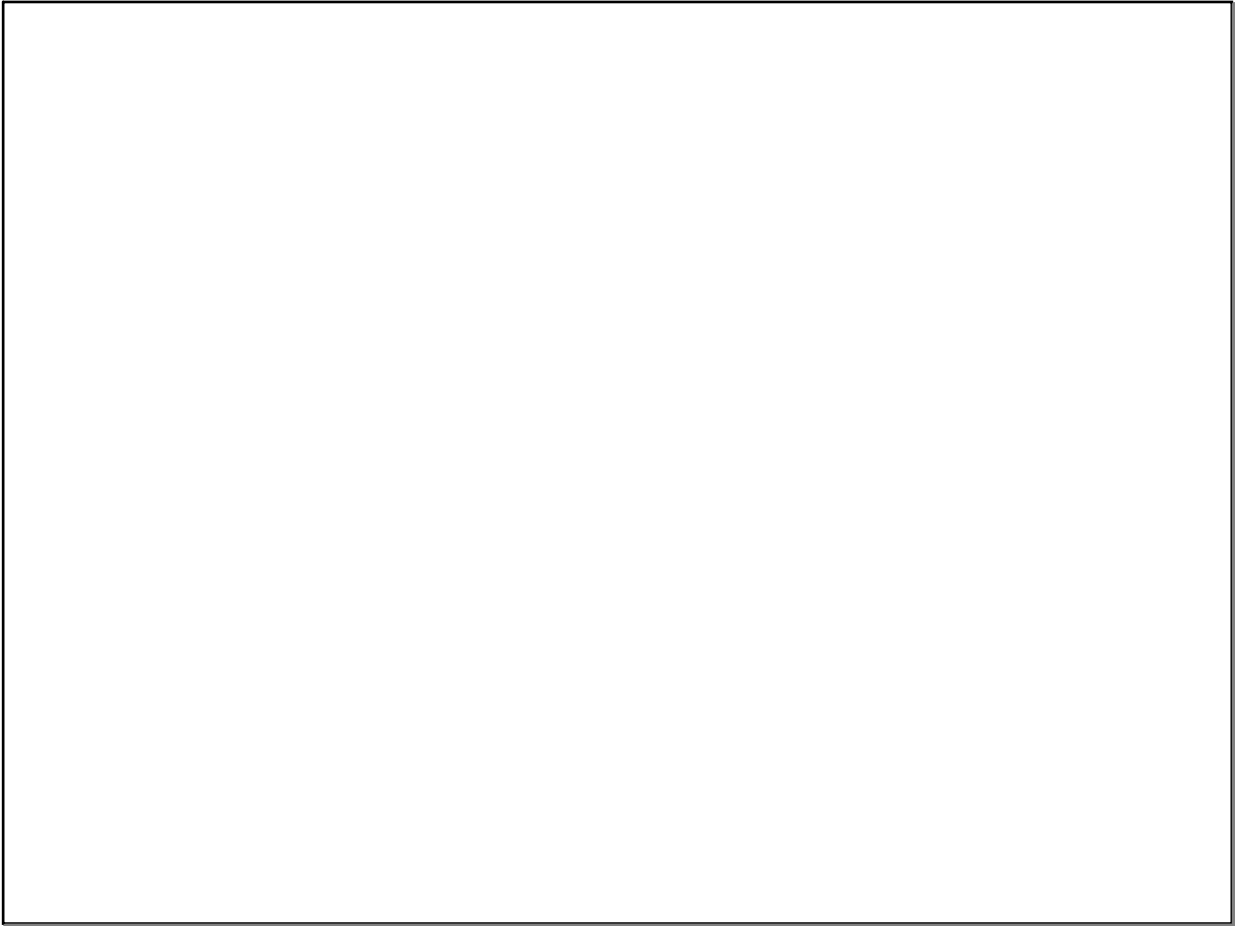
70, 72, 74

(Also Find Domain & Range for each)

C1 Ditto 2: 3 & 4

Graded HW Quiz Tuesday

Sep 24-4:49 PM



Sep 17-8:47 PM