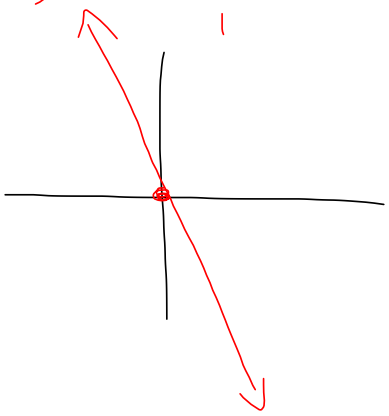
7.3 cont'd

$y = mx + b$

ex 34 $y = -\frac{9}{1}x + 0$ — This is a diagonal line, which will pass the vertical line test.

It is a function.



Domain:

$(-\infty, \infty)$

any real #

ex 40 $x = y^4$

x	y
0	0
1	1
16	2
81	3
256	4

Not a function

x	y
1	-1
16	-2
81	-3
256	-4

Domain:

$x \geq 0$

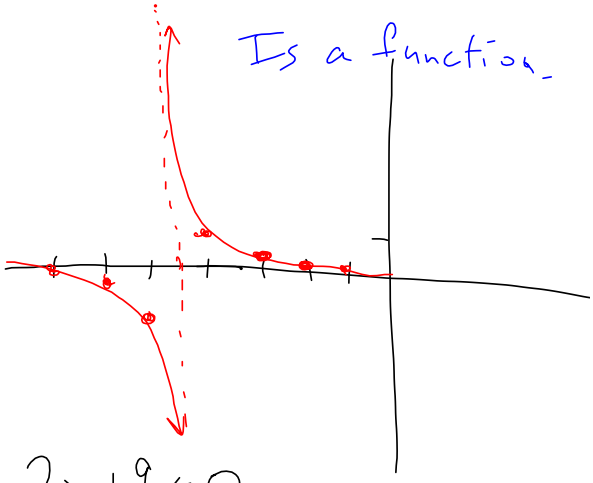
$[0, \infty)$

ex 48

$$y = \frac{1}{2x+9}$$

x	y
-3	1/3
-2	1/5
-1	1/7
0	1/9
1	1/11
2	1/13
3	1/15

x	y
-4	1
-5	-1
-6	-1/3
-7	-1/5



Is a function.

$2x+9 \neq 0$

$-9 \quad -9$

$\frac{2x}{2} \neq \frac{-9}{2}$

$x \neq -\frac{9}{2}$

Domain: all x values except $-4\frac{1}{2}$

$x \neq -4\frac{1}{2}$

7.4 $f(x) = -3x + 4$ $g(x) = -1x^2 + 4x + 1$

ex 4 $f(-3) = -3(-3) + 4$

$= 9 + 4$

$= 13$

$(-3, 13)$

ex 6

$g(10) = -1 \cdot (10)^2 + 4(10) + 1$

$= -1 \cdot 100 + 4 \cdot 10 + 1$

$= -100 + 40 + 1$

$= -59$

$f(x) = -3x + 4$ $g(x) = -1x^2 + 4x + 1$

ex8 $f\left(\frac{7}{3}\right) = -3\left(\frac{7}{3}\right) + 4$

$= -7 + 4$

$= -3$

ex12

$g(k) = -k^2 + 4k + 1$

ex14

$g(-x)$

$= -1(-x)^2 + 4(-x) + 1$

$= -x^2 - 4x + 1$

$f(x) = -3x + 4$ $g(x) = -1x^2 + 4x + 1$

ex 16

$f(x-2) = -3(x-2) + 4$

$= -3x + 6 + 4$

$= -3x + 10$

$f(x) = -3x + 4$ $g(x) = -1x^2 + 4x + 1$

ex 20

$f(x+h) - f(x) =$

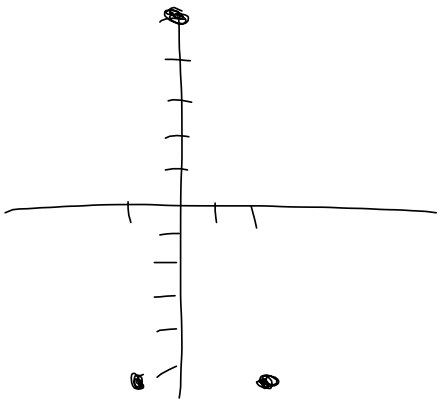
$[-3(x+h) + 4] - [-3x + 4] =$

$-3x - 3h + 4 + 3x - 4 = -3h$

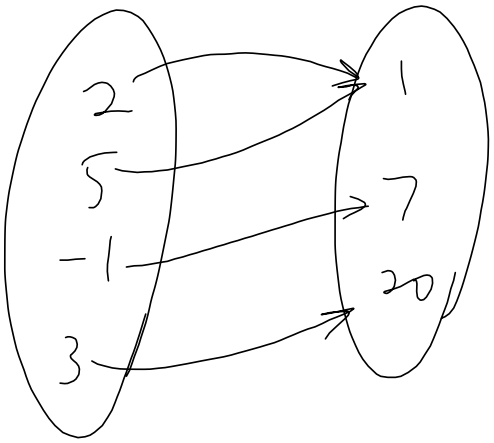
ex 24

$f = \{(-1,-5), (0,5), (2,-5)\}$

find $f(2) = -5$ find $f(-1) = -5$



ex28



$f(2) = 1$

$f(-1) = 7$

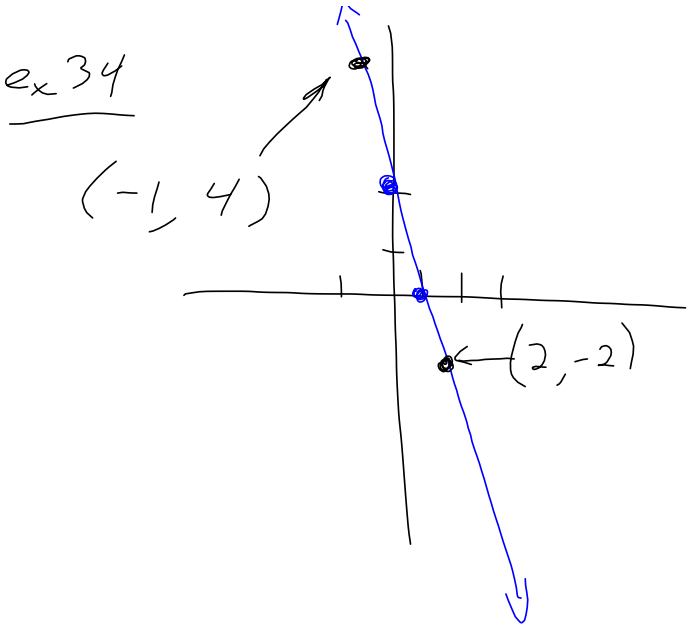
ex 30

x	y
8	6
5	3
2	0
-1	-3
4	6

$f(\overset{x}{2}) = \overset{y}{0}$

$f(-1) = -3$

ex 34



$f(2) = -2$

$f(-1) = 4$

ex 38 $x - 4y = 8$

Solve for y in terms of x

$-x \quad -x$

$\frac{-4y}{-4} = \frac{-x}{-4} + \frac{8}{-4}$

$y = \frac{1}{4}x - 2$

Replace y with function notation $f(x)$

$f(x) = \frac{1}{4}x - 2$

Find $f(3)$

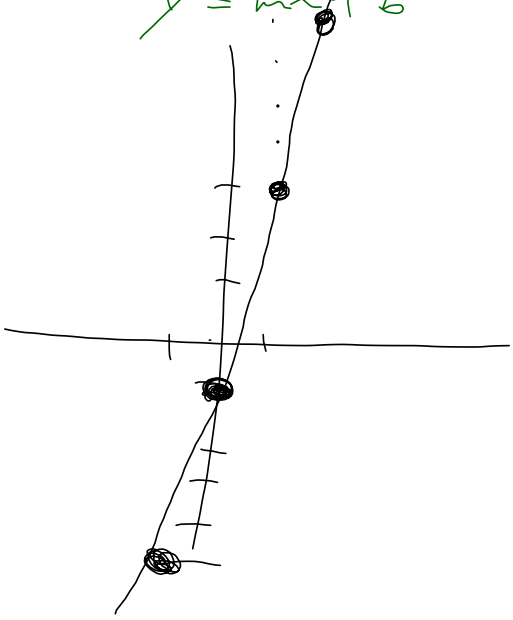
$f(3) = \frac{1}{4}(3) - 2$

$= \frac{3}{4} - \frac{2}{1}$

$= \frac{3}{4} - \frac{8}{4} = \frac{-5}{4}$

ex 46 $g(x) = 4x - 1$

$y = mx + b$



slope $= \frac{4}{1}$ y-int $= -1$

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

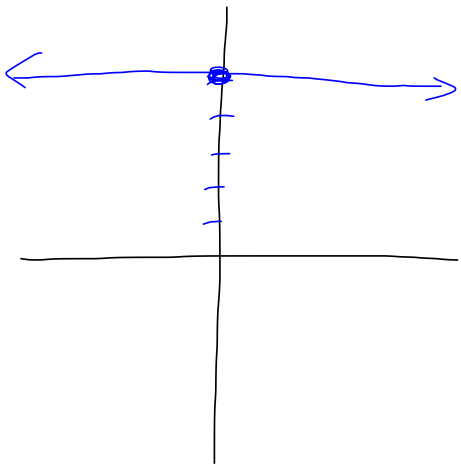
R: $(-\infty, \infty)$

ex 52

$f(x) = 5$

$y = 5$

$y = 0x + 5$



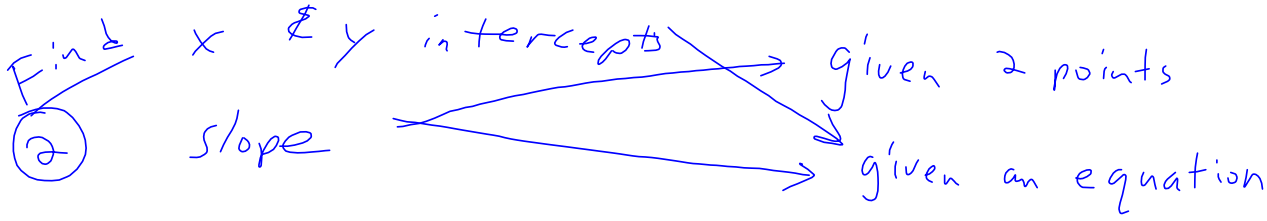
D: $(-\infty, \infty)$

R: $\{5\}$

or $[5,5]$

(5) Write eq. of a line in pt slope form
std. form

given
m & b
2 points
m & pt.
pt. & parallel to another eq.


Find
x & y intercepts
2
slope
given 2 points
given an equation

4 Is it a function?

2 of them — Domain
Range

ordered pairs
graph
mapping
equation
table

11 Evaluate a function

Find $f(2)$

$f(0)$

$f(-1)$

$g(f(2))$

wed

$(f+g)(1) = f(1) + g(1)$

$\left(\frac{f}{g}\right)(1) = \frac{f(1)}{g(1)}$

graph 2 lines

1 domain