Pick Up the Warm Up

HW Hotline →

1.

(14, 10) and (-7, 1)

slope

$$m = \frac{10 - 1}{14 - -7} = \frac{9}{21} =$$

14+7

$$\frac{1 - 10}{-7 - 14} = \frac{-9}{-21}$$

$$m = \frac{10 - 1}{14 - -7}$$

$$m = \frac{9}{}$$

② $y = mx + b$ (14, 10) and (-7, 1)

$y = \frac{3}{7}x + b$

$1 = \frac{3}{7}(-7) + b$

$1 = -3 + b$

$+3 \quad +3$

$b = 4$

$y = \frac{3}{7}x + 4$

③ (8, -1) and (2, 7)

$m = \frac{-1 - 7}{8 - 2}$

$m = \frac{-8}{6}$

$m = -\frac{4}{3}$

$y = mx + b$

$7 = -\frac{4}{3}(2) + b$

$7 = -\frac{8}{3} + b$

mult by 3

$21 = -8 + 3b$

$29 = 3b$

$\frac{29}{3} = b$

$y = -\frac{4}{3}x + \frac{29}{3}$

3 **(8, -1) and (2, 7)**

$m = \frac{-1 - 7}{8 - 2}$

$m = \frac{-8}{6}$

$m = \left(-\frac{4}{3}\right)$

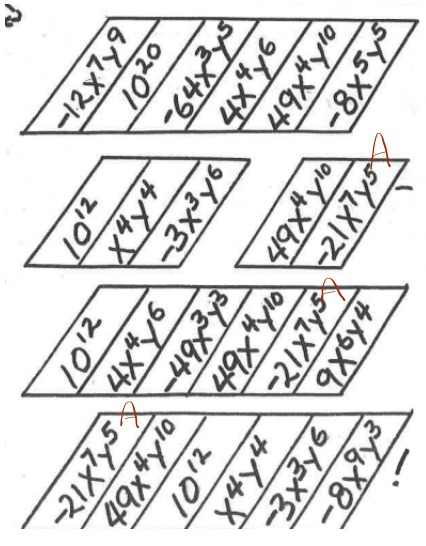
$y = mx + b$

$7 = \frac{-4}{3}(2) + b$

A	$(-3x^5y^4)(7x^2y)$
D	$(4x^6y^5)(-3xy)$
E	$(3xy^5)(-x^2y)$
G	$(8xy^2)(-x^4y^3)$
H	$(xy)(x^2y^2)(xy)$
R	$(8xy^2)(-xy)$

$-21x^7y^5$

$= -8x^5y^5$



I $(-2x^2y^3)^2$	L $(-3x^3y^2)^2$
M $(-2x^3y)^3$	N $(7x^2y^5)^2$
T $(10^4)^3$	U $(10^5)^4$
O $(7xy)^2(-xy) =$	

$(-2)^3 \quad (x^3)^3 \quad y^3$

$-8x^9y^3$

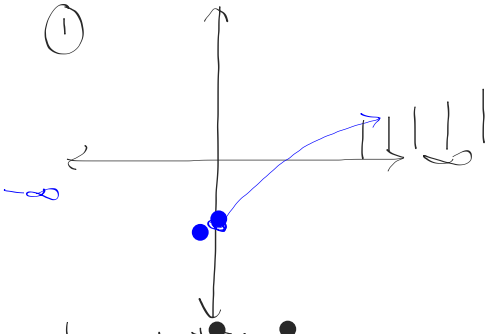
HW Questions ?

let's go over #86

86 $f(x) = \sqrt{x} - 2$

(2) Special point: endpoint $(0, -2)$

(1)



(3) Domain

(4) range

(5) end behavior
(R) As $x \to +\infty, +\infty$

(6)

description:
curved function with an endpoint

(6) y-int $(0, -2)$

$y = \sqrt{x-2}$

x-int

$(4, 0)$

$\sqrt{x-2} = 0$

$(\sqrt{x})^2 = (2)^2$

$x = 4$

(7) Asympt NONE

(8) symmetry NONE

84 find intersection between

$f(x) = 2x^2 - 3x + 4$ and $g(x) = x^2 + 5x - 3$

$2x^2 - 3x + 4 = x^2 + 5x - 3$

$-x^2$

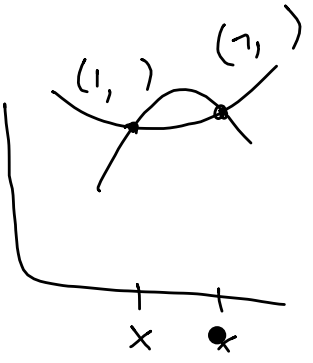
$x^2 - 8x + 7 = 0$

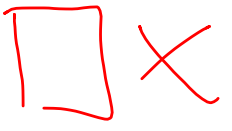
$(x-7)(x-1) = 0$

$a \cdot b = 0$

$x - 7 = 0$ $\quad x - 1 = 0$

$x = 7$ $\quad x = 1$





89 X - intercept

a $y = 3x - 6$ b $y = 2x^2 + 4$

89e

(5, 0) ← answer

91

A) $y = mx + b$

$-b \quad -b$

$y - b = mx$

$x = \frac{y-b}{m}$

OR

$x = \frac{y}{m} - \frac{b}{m}$

B) $A = \pi r^2$

$r^2 = \frac{A}{\pi}$

$r = \pm\sqrt{\frac{A}{\pi}}$

C) $V = LWH$

$W = \frac{V}{LH}$

d) $2x + \frac{1}{y} = 3$ ✔

93 $y = 3x + 15$ $y = 3 - 3x$

c) **Write an equation that does not contain y and solve it for x.**

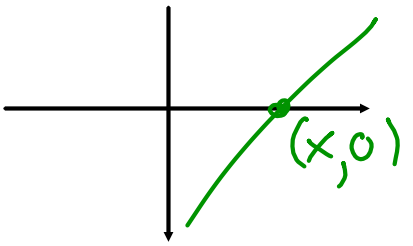
$3x + 15 = 3 - 3x$

$(-2, \quad)$

d) **Use the x-value you found to find the corresponding y- value**

95 $h(x) = x^2 - 5$

find x-intercepts



97 MATCHING

a. $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

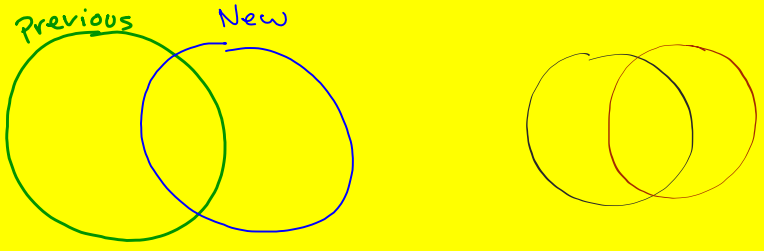
b. $\frac{\sin A}{a} = \frac{\sin B}{b}$

c. $c^2 = a^2 + b^2$

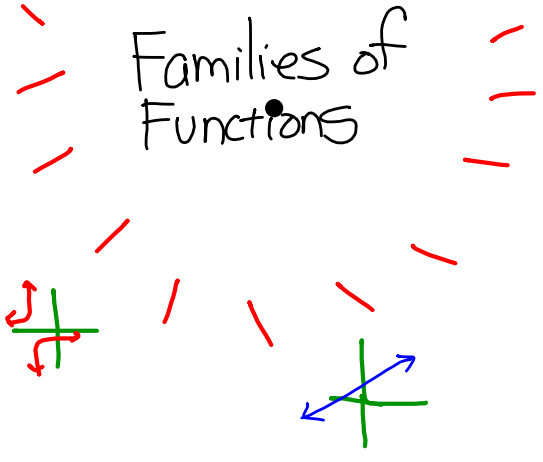
d. $c^2 = a^2 + b^2 - 2ab\cos C$

1. Law of Cosines
2. Law of Sines
3. Pythagorean Theorem
4. Quadratic Formula

Learning is always easier if one can initially make a connection to what you already know



Families of Functions



Determine whether relationships given in tables and situations are linear or not.

background first

Parameters give the function it's shape.

$y = mx + b$ $y = \frac{1}{x-h}$ $y = ax^2 + bx + c$

↑ ↑

c) Parameters

$y = mx + b$ $y = \frac{1}{x-h}$ $y = ax^2 + bx + c$

m, b h a, b, c

What do all functions in the family

$y = mx + b$

have in common?

$y = mx + b$ $\quad y = 3x + 2$

x and y ?

x: inputs

y: outputs

m and b

m, b: constants

What effect does m have?

b ?

is $2y + 5x = 7$ linear ?

$-5x \quad\quad -5x$

$\frac{2y}{2} = \frac{-5x}{2} + \frac{7}{2}$

$y = mx+b$

$y = -\frac{5}{2}x + \frac{7}{2}$

x	y
7	52
8	56
9	60
10	64

6	100
9	300
12	600
15	900

200 300 300

x	y
15	52
270	56
6	60
-4	64

Activity to determine if a situation is linear.

1. Decide if it is linear or not.

2. If linear, what is it's equation.

a.

Pieces of Bread	Grams of Fiber
0	0
1	5
2	10
3	15
4	20

$y = 5x$

b. *Killer Fried Chickens charges $7.00 for a basic bucket of chicken and $0.50 for each additional piece. The input is the number of extra pieces of chicken ordered, and the output is the total cost of the order.*

$y = 0.50x + 7$

$y = 7 + 0.50x$

c.

x	y
10	0
5	5
3	7
2	8
1	9
0	10

$y = -x + 10$

d.

x	y
10	1
5	2
4	2.5
2	5
1	10
0.5	20

e. *James planted a bush in his yard. The year he planted it, the bush produced 17 flowers. Each year, the branches of the bush split, so the number of flowers doubles. The input is the year after planting, and the output is the number of flowers.*

f.

x	y
0	–7
2	–2
4	3
6	8
8	13

$y = 2.5x - 7$

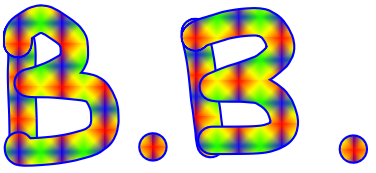
Closure

x	y	
1	0.5	
+3 4	−7	−7.5
+10 10	−22	−15
+5 15	−34.5	−12.5

Decide if the relationship is linear.

$y = -2.5x + 3$

LCQ



Assignment

1 ..... 104 to 110