Pick Up the Warm Up

HW Hotline →

1.

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

slope

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

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

$m = \frac{9}{21}$

$\frac{14}{1}$

$\frac{1}{} = \frac{9}{14+7} = \frac{9^{3}}{21_{7}} = \frac{3}{7}$

$y = mx + b$

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

$10 = \frac{3}{7}(14) + b$

$10 = 6 + b$ $b = 4$

1.

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

find b using $y = mx + b$

slope

$m =$ ____ / ____

2.

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

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

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

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

$y = mx + b$

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

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

$21 = -8 + 3b$

$29 = 3b$

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

2. (8, -1) and (2, 7)

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

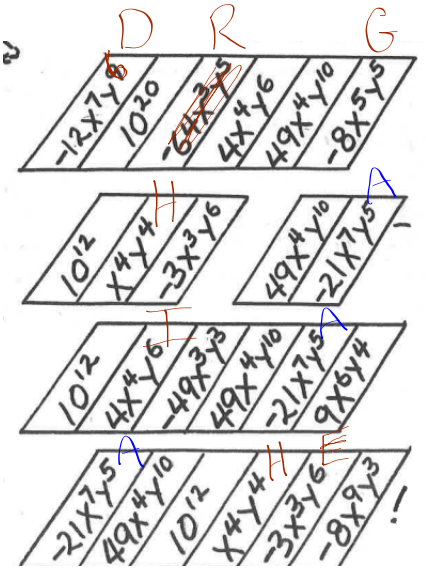
$m = \frac{-8}{6}$

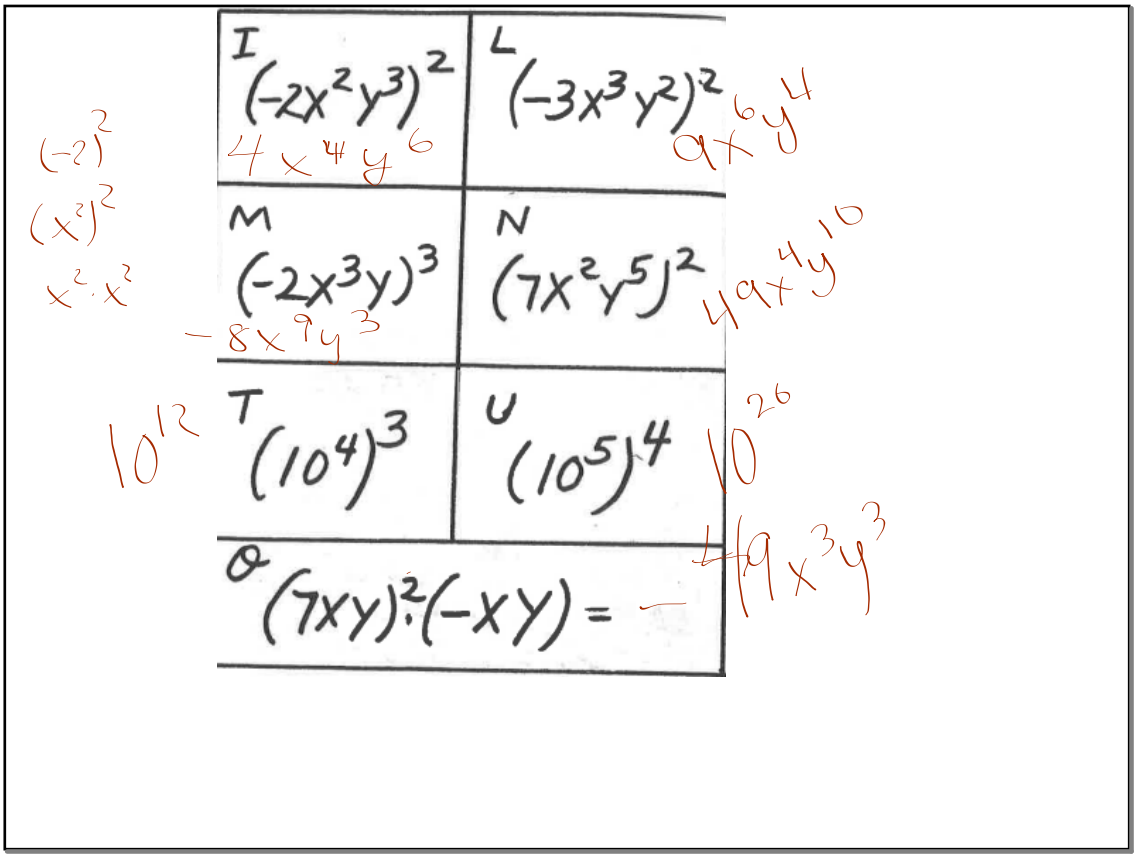
$m = -\frac{4}{3}$

$y = mx + b$

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

A $(-3x^5y^4)(7x^2y)$	$-21x^7y^5$
D $(4x^6y^5)(-3x^1y)$	$-12x^7y^6$
E $(3x^1y^5)(-x^2y^1)$	$-3x^3y^6$
G $(8xy^2)(-x^4y^3)$	$-8x^5y^5$
H $(xy)(x^2y^2)(xy)$	x^4y^4
R $(8xy^2)(-xy)$	$-8x^2y^3$





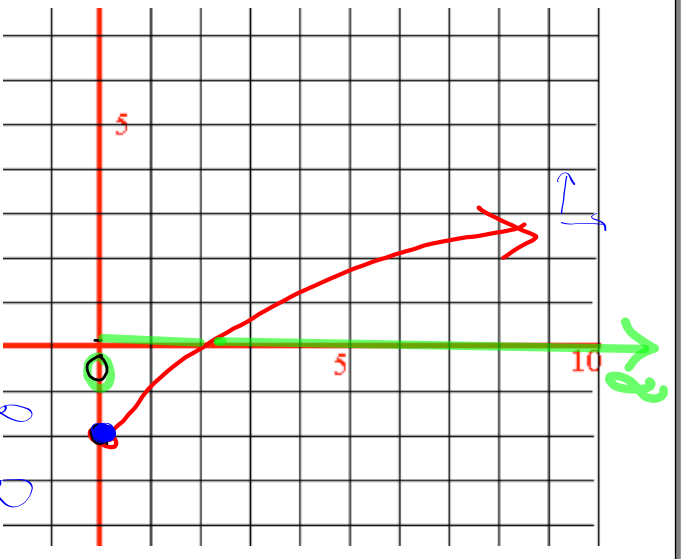
HW Questions ?

let's go over #86

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

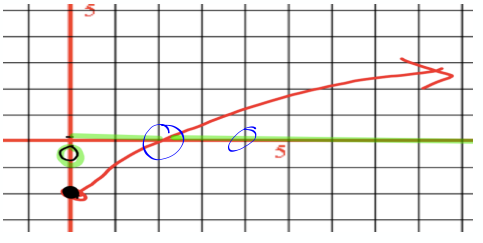
2) endpoint of $(0, -2)$

x	y
0	-2



domain: $0 \le x < \infty$

range: $-2 \le y < \infty$



$-\infty$ $\uparrow$ ∞

5. End behavior $y = \sqrt{x} - 2$

as $x \to \infty$, $y \to \infty$

6. Intercepts $(0, -2)$ $(4, 0)$

84 find intersection between

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

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

$-x^2$

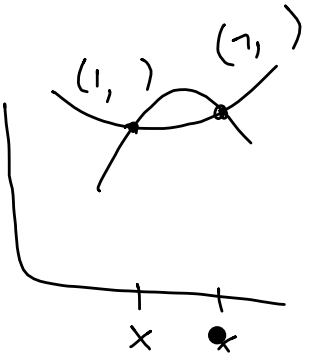
$x^2 - 8x + 7 = 0$

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

$a \cdot b = 0$

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

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



☐ X

89

X - intercept

a $y = 3x - 6$

b $y = 2x^2 + 4$

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.**

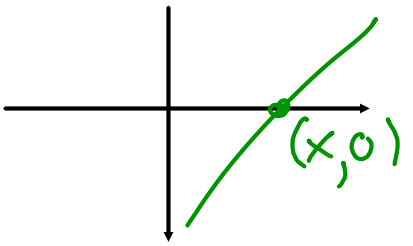
$3x + 15 = 3 - 3x$

$(-2, \quad)$

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

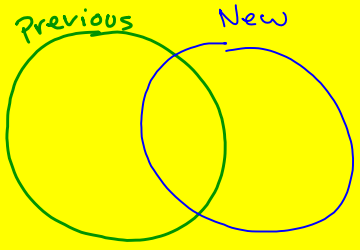
b. $\frac{\sin A}{a} = \frac{\sin B}{b}$

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

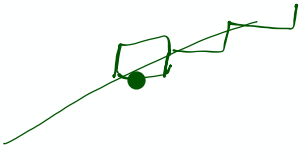
d. $c^2 = a^2 + b^2 - 2ab\cos C$

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

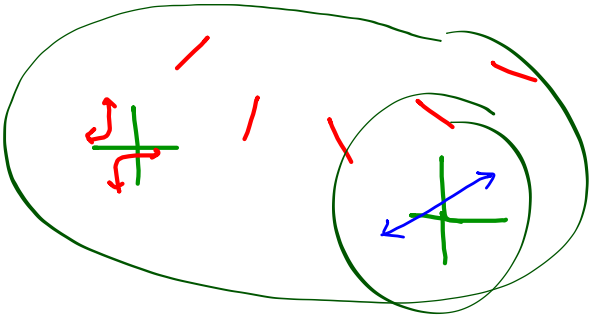
Learning is always easier if one can initially make a connection to what you already know



Linear



Families of Functions



Aim

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

$ax+bx=c$

$2x-4y=7$

$-2x \quad -2x$

$-4y = -2x+7$

$\frac{-4y}{-4} = \frac{-2x}{-4} + \frac{7}{-4}$

$y = \frac{1}{2}x - \frac{7}{4}$

$y = mx+b$

$y = 2x+3$

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

x and y ?

inputs outputs

m and b

constants

What effect does m have?

b ?

Point to the parameters

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

c) Parameters

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

What do all functions in the family

$y = mx + b$

have in common?

move ON TO

a-f

a) decide as a group <u>if</u> it is linear
b) If linear, find the equation.

} try to do so without graphing

With each situation:

1. -- start by writing down the given information (or briefly abbreviating the info if in paragraph form).

2. -- Discuss how you decided if it was linear or not.

3. -- If linear, write the linear equation. If not, move to the next question.

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.

$y = .5x + 7$

$1 \rightarrow 7.50$

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.*

$y = (17)(2)^x$

f.

x	y
0	−7
2	−2
4	3
6	8
8	13

+2 +5 +5

$y = 2.5x - 7$

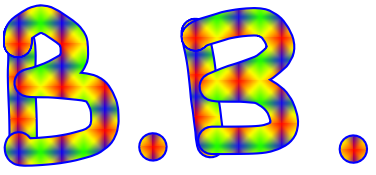
0	−7
2	−2
7	3
6	8
9	13

LCQ

blank piece of paper

Analyze

(A) $y = \sqrt{x+2}$ (B) $y = \sqrt{x+5}$



Closure

x	y
1	0.5
4	−7
10	−22
15	−34.5

Decide if the relationship is linear.

Assignment

1 ..... 104 to 110