Warm Up

Write on your own paper.

HW Hotline →

1. Find the slope of the line between the points (14, 10) and (-7, 1)

and then go on to find the equation in y=mx+b format

Keep all parameters exact

1.

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

slope

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

$$\frac{9}{21} = \frac{9 \div 3}{21 \div 7}$$

$$= \frac{3}{7}$$

find b using $y = mx + b$

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

$$1 = -3 + b$$

$$b = 4$$

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

2. Repeat for the points (8, -1) and (2, 7)

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

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

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

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

$y = mx + b$

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

$7 = -\frac{8}{3} + b$ ·3

$21 = -8 + 3b$

$29 = 3b$

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

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

HW Questions ?

84 find intersection between

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

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

$-x^2$

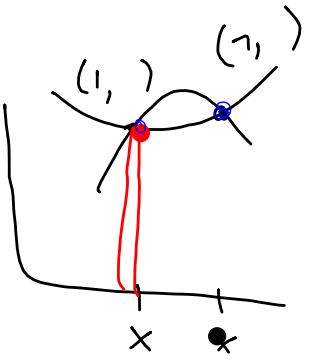
$x^2 - 8x + 7 = 0$

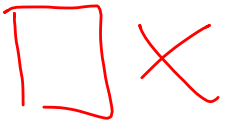
$(x-7)(x-1) = 0$

$a \cdot b = 0$

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

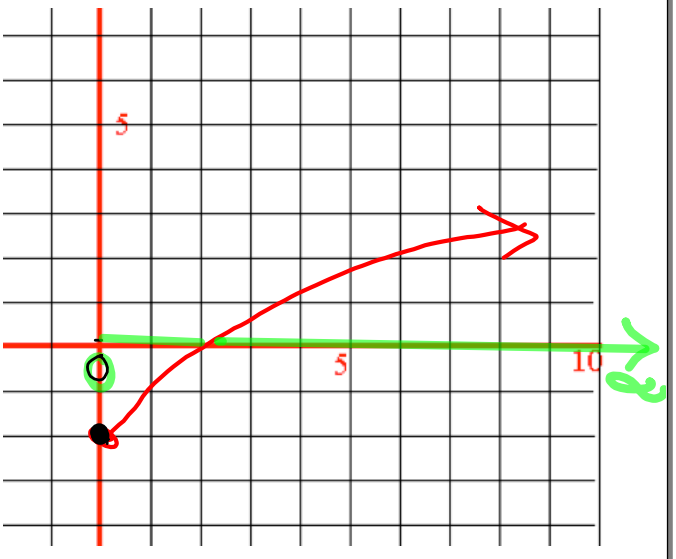
$x = 7$ $\quad x = 1$





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

x	y
0	-2



domain:

range:

89 X - intercept

a) $y = 3x - 6$

b) $y = 2x^2 + 4$

d) $y = 2x^2 - 4$ e) $y = (x-5)^2$

x - intercept

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) $A = \pi r^2$

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

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

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

C) $V = LWH$

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

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

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.

$3x + 15 = 3 - 3x$

$(-2, \quad)$

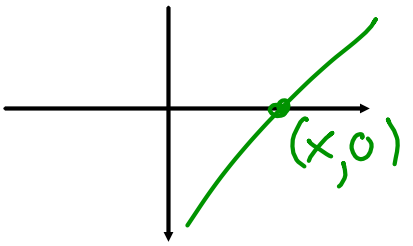
d) Use the x-value you found to find the corresponding y- value

94) deli 5 ft sub → 8 pounds

12 pounder would be length ?

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

find x-intercepts



97 MATCHING

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

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

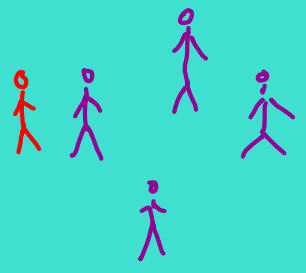
c. $c^2 = a^2 + b^2$

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

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

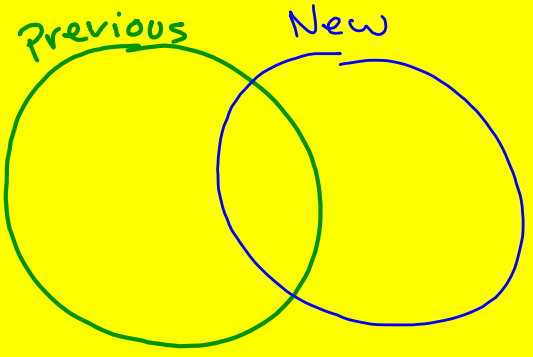
Assembly

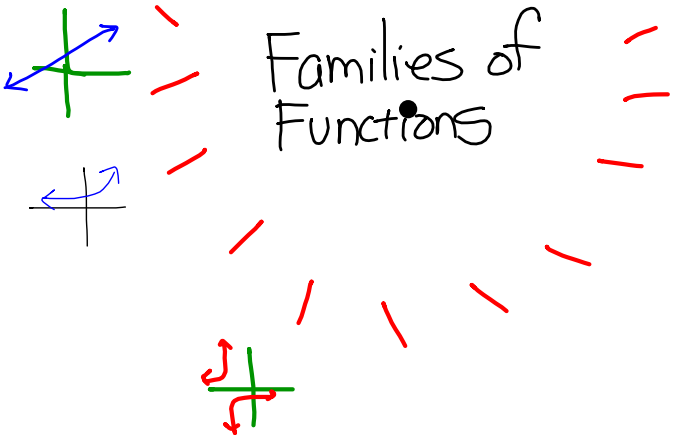
Gym



backpacks

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





Aim

What is common with all linear functions ?

Is a function linear or not?

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

x and y ?

inputs outputs

m and b

constants

What effect does m have?

b ?

Parameters

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

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?

$3x + 2y = 5$

1 - 100 a-f

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

With each situation:

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

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

2. -- 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

$y = 5x + 0$

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.*

$y = 0.5x + 7$

c.

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

$y = -1x + 10$

d.

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

not linear

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.*

x	y
0	17
1	34
2	68
3	136

17

f.

x	y
0	–7
2	–2
4	3
6	8
8	13

$y = 2.5x - 7$

B.B.

How does someone land from a wingsuit flight ?

Do 1-99 a and b NOTES

draw sketches of what you see on your calculator, one sketch for part **a** and one sketch for part **b**

a. $x+2y=10$

$y=-\frac{1}{2}x+3$

$-4y=2x+8$

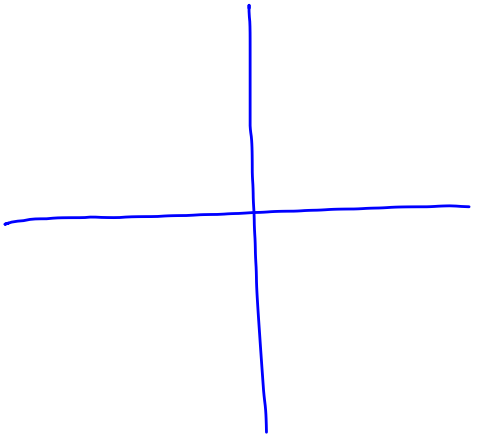
$y=-\frac{1}{2}x$

b. $5x+y=-3$

$y=-\frac{1}{2}x-3$

$3x-4y=12$

$5y-2x=-15$



Closure

x	y
1	0.5
4	–7
10	–22
15	–34.5

$y = -2.5x + 3$

Decide if the relationship is linear.

1 0.5) x
2 -2) x
3 -4.5) x
4 -7
10 -22

$3x$

$0.5 + 3x = -7$
$-0.5 \quad -0.5$
$3x = -7.5$
$\frac{3x}{3} = \frac{-7.5}{3}$

-2.5

Assignment

Worksheet 1.2.3

#5 $x^2 + 3x - 3 = 0$