Assignment Self-Monitoring Sheet

	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
Monday Date: 9/4 Topic:	0 1 2	NO SCHOOL LABOR DAY
Tuesday Date: 9/5 Topic: Pattern Task	0 1 2	**Example Comment:** "I was able to describe the how the figures were growing"
Wednesday Date: 9/6 Topic: No Homework - Pre Assessment Yesterday!	0 1 2	
Thursday Date: Topic:	0 1 2	
Friday Date: Topic:	0 1 2	

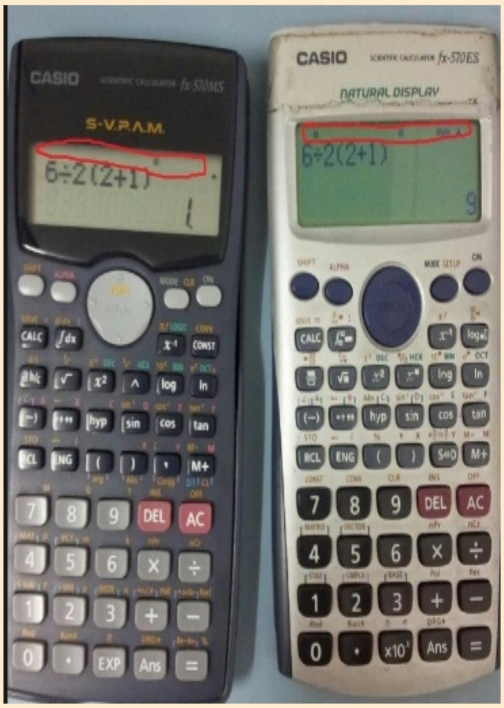
What do you notice? Which one is correct?

$6 \div 2(3)$

$6 \div 6 = 1$

$6 \div 2(3)$

$3(3) = 9$



Warm-up:

What are the names of these types of functions (equations)?

$y = \frac{1}{2}x - 5$ linear $\quad f(x) = \frac{1}{2}x - 5$

$y = 2^x$ Exp. $\quad g(x) = 2^x$

$y = \sqrt{x}$ Sq. root $\quad f(x) = \sqrt{x}$

$y = x^2 + 5x$ quad. $\quad h(x) = x^2 + 5x$

Class Plan:

1. Warm-up
2. What is a function?
   ~How can we take useful notes?
3. Practice evaluating functions

Today you will evaluate (plug into) several different functions.

Organization in Math Class

***Rate Your current organization

1 Low: Needs the most help with organization.

1 Low	2 Mild	3 Moderate	4 Strong	5 Extreme

5 Extreme: I am sooo organized!

***Reflect on your rating.

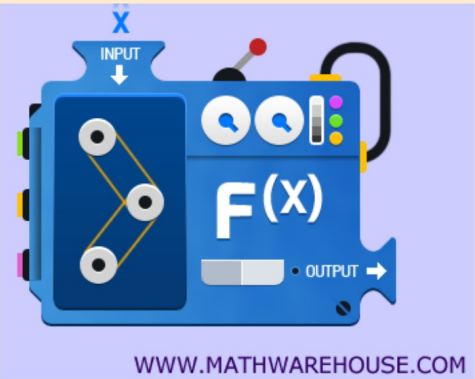
- What happens when you are/or are not organized?
- How can you improve and maintain?

Organization in Math Class

As a group at your tables…

- List important things to remember *when taking notes in math class.*
- Each group will share 1 idea.

What is a Function?



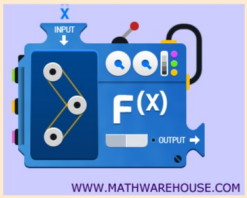
A function takes an input, and produces an output.

$$f(x) = \frac{1}{2}x - 5 \qquad f(x) = \sqrt{x}$$

$$h(x) = x^2 + 5x - 24 \qquad g(x) = 2^x$$

Function Notation

$$y = f(x)$$



Reads "f of x"

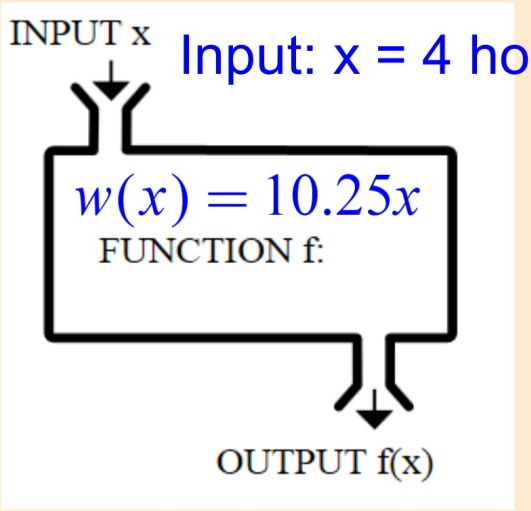
The function takes in x

Equivalent functions $y = 2x$

$f(x) = 2x$

Example: Evaluate

Layla works at Cub Foods, $10.25 per hour.



Input: x = 4 hours

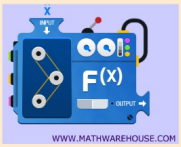
$w(4) = 10.25(4)$

$w(4) = \$41$

Output: y = $\$41 = w(4)$

Function Notation

$$y = f(x)$$

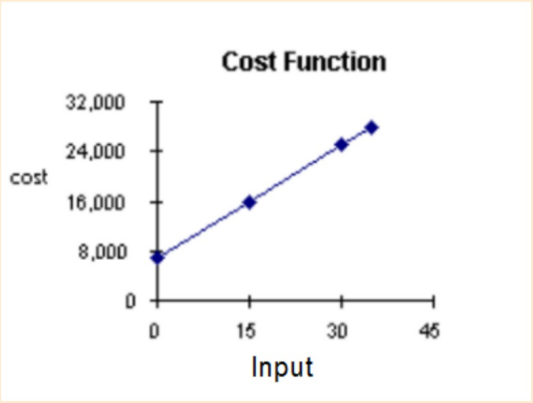


What is the purpose of this notation?

- It gives it a name.
- It names the relationship between the variables.
- f(5) tells the input AND output
- Agreed upon symbols ("short-cut")
- Allows for further computation [Calculus: f"(x)]

Unit 1: Linear Functions

What is a Linear Function?



How do we know if it is linear?

Example: Evaluate each function.

$h(n) = 3n + 2$; Find $h(1)$

$h(1) = 3(1) + 2$

$h(1) = 3 + 2$

$h(1) = 5$

Example: Evaluate each function.

$g(x) = 4x - 4$; Find $g(3)$

$g(3) = 4(3) - 4$

$g(3) = 12 - 4 = 8$

Linear Function

Example: Evaluate each function.

$$g(n) = n^2 + 2n; \text{ Find } g(-3)$$

$g(-3) = (-3)^2 + 2(-3)$

$g(-3) = 9 - 6$

$g(-3) = 3$

Quadratic Function

Example: Evaluate each function.

$$g(x) = 2x^2 - 4; \text{ Find } g(-6)$$

$g(-6) = 2(-6)^2 - 4$

$2(36) - 4$

$72 - 4$

68

Quadratic Function

Example: Evaluate each function.

5) $f(x) = \frac{4}{3}x - \frac{3}{2}$; Find $f(-2)$

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

$f(-2) = \frac{-8}{3} - \frac{3}{2}\left(\frac{3}{3}\right)$

$f(-2) = \frac{-16}{6} - \frac{9}{6} = \frac{-25}{6} = -4\frac{1}{6}$

Linear Function

Example: Evaluate each function.

$f(a) = -\frac{3}{4}a + \frac{5}{3}$; Find $f\left(-\frac{2}{5}\right)$

$y = -\frac{3}{4}\left(-\frac{2}{5}\right) + \frac{5}{3}$

$y = \frac{3}{10} + \frac{5}{3}$

$y = \frac{9}{30} + \frac{50}{30}$

$= 1\frac{29}{30}$

Linear Function

Example: Evaluate each function.

$f(a) = -\frac{3}{4}a + \frac{5}{3}$; Find $f\left(-\frac{2}{5}\right)$

$f\left(-\frac{2}{5}\right) = -\frac{3}{4}\left(-\frac{2}{5}\right) + \frac{5}{3}$

$f\left(-\frac{2}{5}\right) = \frac{6}{20} + \frac{5}{3}\left(\frac{10}{10}\right)$

$f\left(-\frac{2}{5}\right) = \frac{9}{30} + \frac{50}{30}$

$f\left(-\frac{2}{5}\right) = \frac{59}{30} = 1\frac{29}{30}$

Linear Function

Choose the level in which you will be challenged!

Level 1: $f(t) = 2t + 3$; Find $f(0)$

Level 2: $h(x) = x^2 - 5x$; Find $h(2)$

Level 3: $p(a) = 3^{a+1} + \frac{1}{2}$; Find $p(0)$

Unit 1: Linear Functions

DO:"Evaluate Functions" WS

(Choose level of challenge)

Done? Hold onto handout! Help others.

Objectives:

- familiarize with math notation
  "y" = output = f(x)
- Practice plugging into a variety of functions (USE PARENTHESIS!)
- Practice using mental math!

Solutions to Evaluating Functions

Level 1:

1) 24	2) 9	3) 9	4) 10
5) 38	6) −26	7) 3	8) −19
9) −4	10) 5	11) −3	12) 20
13) 4	14) 3	15) 2	16) −6
17) $6y + 4$	18) $-8t + 5$	19) $-12x + 1$	20) $6n - 5$

Level 2:

1) 30	2) 13	3) 3	4) 14
5) 16	6) −10	7) −6	8) −24
9) −10	10) 11	11) −1	12) 39
13) 2	14) $-\frac{1}{5}$	15) $\frac{5}{4}$	16) $\frac{7}{3}$
17) 7	18) 3	19) −124	20) −28
21) −6	22) 20	23) 18	24) 5
25) 14	26) 62	27) $3z - 1$	28) $8n + 5$
29) $-9b - 3$	30) $-4n$		

Solutions to Evaluating Functions
Level 3:

1) -9	2) $-\frac{14}{5}$	3) -3	4) $\frac{11}{10}$
5) 45	6) 20	7) 7	8) -28
9) -126	10) -63	11) -28	12) 120
13) 2	14) 25	15) $\frac{1}{16}$	16) $-\frac{1}{2}$
17) 1	18) $\frac{7}{2}$	19) $\frac{5}{4}$	20) 2
21) $\frac{31}{15}$	22) 5	23) $16n^2-2$	24) $4x^2-1$
25) $2a+11$	26) $2x^4-2+2x^2$	27) $8a+4$	28) $-4a+5$
29) $-4+\frac{3}{16}x^2$	30) $-3x-14$	31) $-x^3-3$	32) $2+3x+x^2$
33) $-3b^3-18b^2-36b-23$	34) $12-4t$	35) $16x+2$	
36) $6x-3$	37) $6+y$	38) $3x^2+5x$	