Warm Up:

1. **What is the domain and range of the following relation? Is it a function?**

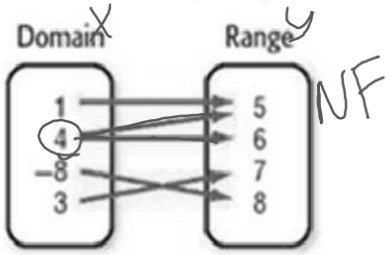
$f = \{(0, 4), (0, 2), (0, 0)\}$

D: {0}
R: {4, 2, 0}
Not a Function

2. **Write the following relation as a set of ordered pairs, and list the domain. Is it a function?**

{(1, 5), (4, 6), (−8, 8), (4, 5), (3, 7)}

D: {1, 4, −8, 3}

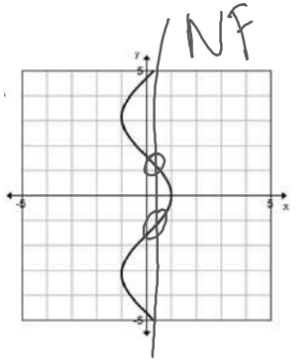


NF

3. **Decide if the following are functions. Explain why or why not.**

NF

x	y
2	7
5	−3
3	5
−4	−2
5	2



NF

Function Notation: $f(x)$

f is a function of x

f of x

Independent:
- the x's
- input
- Domain

Dependent:
- the y's; f(x)
- output
- Range

Example 1: Match the following equations with the correct function notation.

A. $y = 2x + 5$ → 1. $f(x) = -2 + 3x$

B. $y = 3(2)^x + 4$ → 2. $h(x) = 3(2)^x + 4$

C. $y = -2 + 3x$ → 3. $r(m) = 2m + 5$

Example 2: Circle the equations that are correctly in function notation.

$y = 2x + 4$ $\quad$ $f(x) = 3x$ $\quad$ $f = 7x - 9$ $\quad f(x) = 7x - 9$

$g(x) = 2x - 13$ $\quad$ $x = 8y - 13$ $\quad$ $h(x) = 15$

$y = 2x^2$ $\quad$ $f = 5x$ $\quad$ $z(x) = -8x^3$

How do you use a table to evaluate a function?

for f(#) go to the # on the x side then go over and find the y value.

Example 3: Use the table to find each of the following…

x	$f(x)$
-2	5
-1	-2
0	3
1	0
2	-1
3	1

A. $f(0) = 3$

B. $f(2) = -1$

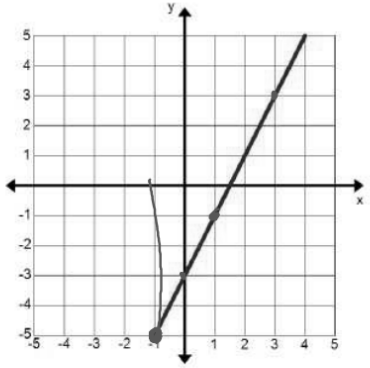
C. $f(3) = 1$

D. $f(-2) =$

How do you use a graph to evaluate a function?

for f(#) go to the # on the x-axis and then go up or down to see where it crosses.

Example 4: Use the graph to find each of the following…



A. $f(-1) = -5$

B. $f(1) = -1$

C. $f(3) = 3$

D. $f(0) = -3$

Sec1 | Notes 4-2 Function Notation | Unit 4

How do you use an equation to evaluate a function?

for f(#) plug the # into x, USE Parenthesis

Example 5: Use each equation to find the following…

A. For $f(x) = 4x - 9$, find $f(3)$

$f(3) = 4(3) - 9$
$= 12 - 9$
$= 3$

B. For $g(x) = x^2 + 4$, find $g(-2)$

$g(-2) = (-2)^2 + 4 = 8$

C. For $h(x) = -\frac{1}{2}x + 8$, find $h(10)$

$h(10) = -\frac{1}{2}(10) + 8 = \boxed{3}$

Example 6: Evaluate the following with the given inputs.

A. $f(x) = 3x - 5$ with $\{-2, 2, 3, 10\}$

$f(-2) = -11$ $\quad f(3) = 4$
$f(2) = 1$ $\quad f(10) = 25$

B. $g(x) = x^2 - 5$ with $\{-2, 2, 3, 10\}$

$\{-1, -1, 4, 95\}$