

Notes 2-2

Sec 1 H

Function Notation

Unit 2

Coordinate Points Written in Function Notation:

(x, y) $f(x) = y$ $f(2) = -7$ $(2, -7)$

Write the coordinate point that is shown below.

Ex. 1: $f(-4) = 23$

$(-4, 23)$

Ex. 2: $f(0) = 4$

$(0, 4)$

Given the following picture represents $g(x)$, use the graph to find the following values.

Ex. 3: $g(5) = 1$

Ex. 5: $g(x) = 8y$

$g(-7) = 8$

Ex. 7: $g(x) = 6$

$g(-9) = 6$
 $g(-11.5) = 6$

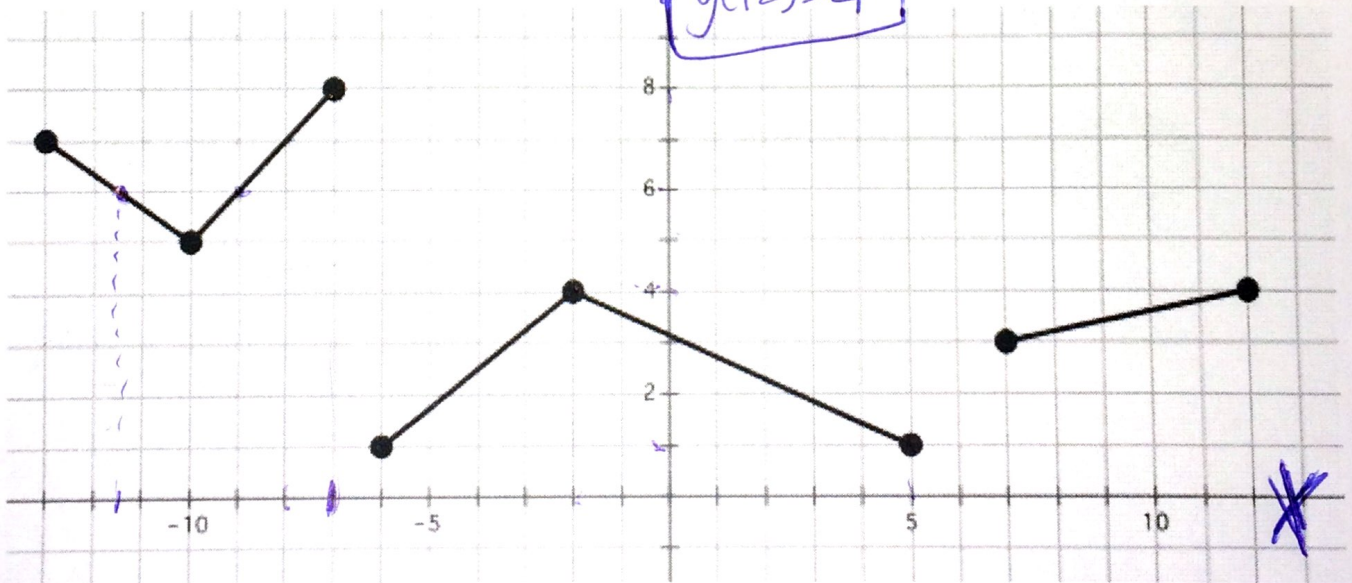
Ex. 4: $g(-8) = 7$

Ex. 6: $g(x) = 4$

$g(-2) = 4$
 $g(12) = 4$

Ex. 8: $g(x) = 5$

$g(-10) = 5$



Use the table to answer the following questions.

Ex. 9: $f(-1) = 4$

Ex. 10: $f(6) = 3$

Ex. 11: $f(x) = 1$
 $f(7) = 1$

Ex. 12: $f(x) = 3$

$f(6) = 3$
 $f(1) = 3$

x	$f(x)$
-1	4
1	3
3	7
4	6
6	3
7	1

Given that $f(x) = 3x - 9$ and $g(x) = x^2 + 4$, find the following values.

Ex. 13: $g(7) = (7)^2 + 4$
 $= 49 + 4$

$g(7) = 53$

* DO NOT PLUG it in!
Set it EQUAL to *

Ex. 15: $f(x) = 15$

$f(8) = 15$

$$\begin{array}{r|l} 3x - 9 = 15 & \\ +9 & +9 \\ \hline 3x = 24 & \\ \div 3 & \div 3 \\ \hline x = 8 & \end{array}$$

Ex. 14: $f(5) = 3(5) - 9$
 $= 15 - 9$

$f(5) = 6$

Ex. 16: $f(x) = -18$

$f(-3) = -18$

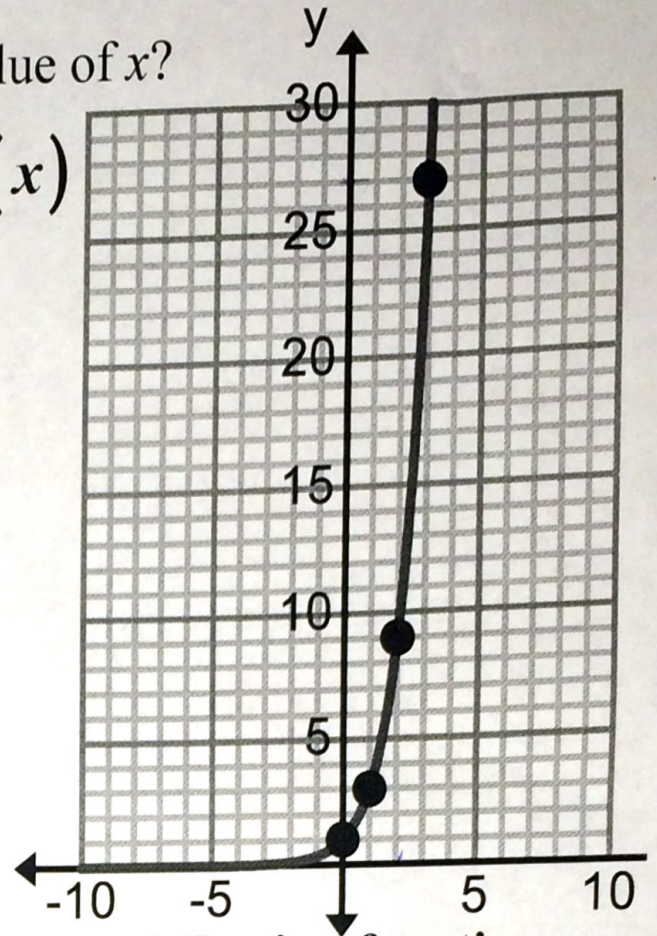
$$\begin{array}{r|l} 3x - 9 = -18 & \\ +9 & +9 \\ \hline 3x = -9 & \\ \div 3 & \div 3 \\ \hline x = -3 & \end{array}$$

Ex. 17: If $g(x) = 27$, what is the value of x ?

$$g(3) = 27$$

$$x = 3$$

$$g(x)$$



Ex. 18:

$$g(2) = 9$$

Use the following functions to evaluate the following function operations.

$$f(x) = 3x + 2, \quad g(x) = -2x + 7, \quad h(x) = x^2 - 3,$$

Ex. 19: $-5 \cdot f(x)$

$$-5 \cdot (3x + 2)$$

$$-15x - 10$$

$$(3x + 2) \cdot (-2x + 7)$$

$$-6x^2 + 21x - 4x + 14$$

$$-6x^2 + 17x + 14$$

Ex. 20: $f(x) + h(x)$

$$(3x + 2) + (x^2 - 3)$$

$$3x + 2 + x^2 - 3$$

$$x^2 + 3x - 1$$

Ex. 21: $f(x) \cdot g(x)$

Use the following functions to evaluate the following function operations.

$$f(x) = 3x + 2, \quad g(x) = -2x + 7$$

Ex. 22: $f(x) - g(x) = (3x + 2) - (-2x + 7)$
 $(3x + 2) + (2x - 7)$
 $3x + 2 + 2x - 7$
 $5x - 5$

Ex. 23: $\frac{g(x) + 3}{4} = \frac{-2x + 7 + 3}{4} = \frac{-2x + 10}{4} = \frac{-2x}{4} + \frac{10}{4} \div 2$
 $\frac{-1x}{2} + \frac{5}{2}$

Ex. 24: $f(3) \cdot g(2) = (3(3) + 2) \cdot (-2(2) + 7)$
 $(9 + 2) \cdot (-4 + 7)$
 $(11) \cdot (3) = 33$

Ex. 25: $f(x) = g(x)$

$$\begin{array}{r|l} 3x + 2 & = & -2x + 7 \\ +2x & & +2x \\ \hline 5x + 2 & = & 7 \\ -2 & & -2 \\ \hline 5x & = & 5 \end{array} \quad x = 1$$