Unit 1B: 1: Function Notation #2 Name: Hr:

Directions: Convert from a (x, y) coordinate point to function notation.

1) (3, -4) $f(3) = -4$

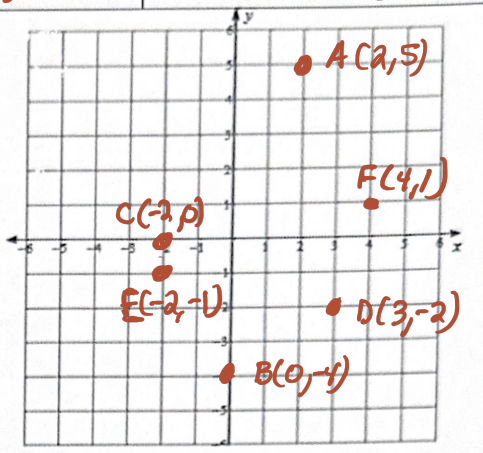
2) (-5, 6) $f(-5) = 6$

3) (0, 5) $f(0) = 5$

4) (-6, 0) $f(-6) = 0$

5) Directions: Plot each point. Label with each letter.

A - f(2) = 5
B - f(0) = -4
C - f(-2) = 0
D - f(3) = -2
E - f(-2) = -1
F - f(4) = 1



Directions: Evaluate or find the solution. Express your answer in function notation.

6) $g(x) = -2x + 5$; *Find* $g(-5)$

$g(-5) = -2(-5) + 5$
$= 10 + 5$
$g(-5) = 15$

7) $h(z) = |-z - 3| + 1$; *Find* $h(z) = 3$

$|-z-3| + 1 = 3$
$-1 \quad -1$
$|-z-3| = 2$

Case 1
$-z - 3 = 2$
$+3 \quad +3$
$-z = 5$
$z = -5$

Case 2
$-z - 3 = -2$
$+3 \quad +3$
$-z = 1$
$z = -1$

8) $b(n) = 2n^3 - 4$; *find* $b(-4)$

$b(-4) = 2(-4)^3 - 4$
$= 2(-64) - 4$
$= -128 - 4$
$b(-4) = -132$

9) f(x) = 2x - 5; Find f(x) = -3

$2x - 5 = -3$
$+5 \quad +5$
$\frac{2x}{2} = \frac{2}{2}$
$x = 1$

10) $g(u) = |x - 10|$; *Find* $g(u) = 104$

$|x - 10| = 104$

CASE 1
$x - 10 = 104$
$+10 \quad +10$
$x = 114$

CASE 2
$x - 10 = -104$
$+10 \quad +10$
$x = -94$

11) $j(x) = -3\sqrt{3x}$; *Find* $j(30)$

$j(30) = -3\sqrt{3(30)}$
$= -3\sqrt{90}$ good

$\sqrt{90} = \sqrt{9 \cdot 10}$
$= 3\sqrt{10}$

$= -3 \cdot 3\sqrt{10}$
$= -9\sqrt{10}$ Best

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12) $h(n) = 3|2n - 15| + 1$; *Find* $h(4)$

$h(4) = 3|2 \cdot 4 - 15| + 1$

$= 3|8 - 15| + 1$

$= 3|-7| + 1$

$= 3 \cdot 7 + 1$

$= 21 + 1$

$h(4) = 22$

13) $f(x) = 2x^2 - 3x + 4$; *Find* $f(-3)$

$f(-3) = 2(-3)^2 - 3(-3) + 4$

$= 2(9) + 9 + 4$

$= 18 + 9 + 4$

$f(-3) = 31$

14) $b(n) = -2|n - 2|$; *Find* $b(n) = -44$

$\frac{-2|n-2|}{-2} = \frac{-44}{-2}$

$|n - 2| = 22$

Case 1: $n - 2 = 22$, $+2 \quad +2$, $n = 24$

Case 2: $n - 2 = -22$, $+2 \quad +2$, $n = -20$

15) $h(x) = \frac{2x-5}{3x}$; *Find* $h(-5)$

$h(-5) = \frac{2(-5) - 5}{3(-5)}$

$= \frac{-10-5}{-15}$

$= \frac{-15}{-15}$

$h(-5) = 1$

16) $f(m) = m^2 + 17m$; *Find* $f(m) = -60$

$m^2 + 17m = -60$

$m^2 + 17m + 60 = 0$

$(m + 5)(m + 12) = 0$

$m = -5 \quad m = -12$

17) $f(l) = 2\sqrt{3l} + 3\sqrt{4l}$; *Find* $f(27)$

$f(27) = 2\sqrt{3 \cdot 27} + 3\sqrt{4 \cdot 27}$

$= 2\sqrt{81} + 3\sqrt{108}$

$= 2 \cdot 9 + 3\sqrt{36 \cdot 3}$

$= 18 + 3 \cdot 6\sqrt{3}$

$= 18 + 18\sqrt{3}$

18. $f(x) = 5x - 3$: Find $f(4x)$

$f(4x) = 5(4x) - 3$

$= 20x - 3$

19. $f(x) = 3x + 4$: Find $f(x - 2)$

$f(x-2) = 3(x-2) + 4$

$= 3x - 6 + 4$

$= 3x - 2$

20. $f(x) = |x| + 5$; Find $f(x + 2)$

$f(x+2) = |x+2| + 5$

21. $f(x) = x^2 + 6$; Find $f(x - 5)$

$f(x-5) = (x-5)^2 + 6$

22. $f(x) = -4x + 1$; Find $f(\frac{1}{2}x)$

$f(\frac{1}{2}x) = -4(\frac{1}{2}x) + 1$

$= -2x + 1$

23. $g(x) = (x - 4)^2 + 3$; Find $f(x + 4)$

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

$= x^2 + 3$