## WORKSHEET / L3.3 Writing Functions

**Name:** _____ **Grade 9/___** **Date:** _____

**I) determine a relationship between the x and y values, Write an equation.**

**1.**

| x | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| y | -1 | 0 | 1 | 2 |

$Y = x - 2$
$F(x) = x - 2$

**2.**

| x | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| y | -2 | -4 | -6 | -8 |

$Y = -2x$
$F(x) = -2x$

**3.** {(1, 4), (2, 7), (3, 10), (4, 13)}

$Y = 3x + 1$
$F(x) = 3x + 1$

**4.** {(1, -1), (2, -2), (3, -3), (4, -4)}

$Y = -x$
$F(x) = -x$

**II) Identify the independent and dependent variables in each situation. Write an equation in function notation**

**5.** An air-conditioning technician charges customers $75 per hour.

$Y = 75x$ $F(x) = 75x$

**6.** An employee receives 2 vacation days every month worked.

$Y = 2x$ $F(x) = 2x$

**7.** A car can travel 28 miles per gallon of gas.

$Y = 28x$ $F(x) = 28x$

**8.** An ice rink charges $3.50 for skates and $1.25 per hour.

$Y = 1.25x + 3.50$ $F(x) = 1.25x + 3.50$

**III) Evaluate each function for the given input values.**

**9.** For **f(x) = 7x + 2**, find **f(x)** when **x = 0** and when **x = 1**

f(0) = 7(0) + 2 = 2 f(1) = 7(1) + 2 = 9

**10.** For **g(x) = 4x – 9**, find **g(x)** when **x = 3** and when **x = 5**

f(3) = 4(3) – 9 = 3 f(5) = 4(5) – 9 = 11

**11.** For **f(x) = $\frac{2}{3}$x + 3**, find **f(x)** when **x = 9** and when **x = -3**

f(9) = 2/3(9) + 3 = 9 f(-3) = 2/3(-3) + 3 = 2

**12.** For **g(x) = $x^2$ – 5**, find **g(x)** when **x = 0** and when **x = 3**

f(0) = $(0)^2$ – 5 = -5 f(3) = $(3)^2$ – 5 = 4

**IV) A mail-order company charges $5 per order plus $2 per item in the order, up to a maximum of 4 items. Write a function to describe the situation. Find the reasonable domain and range for the function.**

Y = 2x + 5 F(x) = 2x + 5 Domain {1, 2, 3, 4} Range {7, 9, 11, 13}

**V) ERROR ANALYSIS:** Rashid saves $150 each month. He wants to know how much he will have saved in 2 years. He writes the rule **s = m + 150** to help him figure out how much he will save, where s is the amount saved and m is the number of months he saves. Explain why his rule in incorrect?

He needs to multiply the 150 by the number of months

S = 150m, therefore he saves s = 150(24) = $3600

**VI) Which Marsha buys x pens at $0.70 per pen and one pencil for $0.10. Which function gives the total amount Marsha spends?**

**A** c(x) = 0.70x + 0.10x

**B** c(x) = 0.70x + 1

**C** c(x) = (0.70 + 0.10)x

**D** c(x) = 0.70x + 0.10