Algebra OPFI Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 3 Final Exam Review

**Examples:**

*Determine whether each relation is a function. Explain*

1.

2.

3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Input, x | -2 | -1 | 0 | 1 | 2 |
| Output, y | 3 | 2 | 1 | 3 | 7 |



(2,4), (2,3), (2,8), (2,0), (2,2)

5. Evaluate f(x) = 2x – 1 when x = 3

4. For h(x) = 15x, find the value of x for which h(x) = 60

6. The function **C(x) = 15x – 10** represents the cost (in dollars) of buying x tickets to a concert with a $10 coupon.

a. f(3) = 35, interpret this value in terms of context.

7. Ms.Naumann has a swimming pool that contains 10,000 gallons of water. She is draining for the winter at a rate of 1,500 gallons per hour.

1. Create a function that models how much water is left in the pool after x hours.
2. Ms. Naumann wants only 1,000 gallons of water left in the pool. How long does the pool have to drain to accomplish this?

Practice:



1.

2.

3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Input, x | -2 | -2 | -2 | 1 | 2 |
| Output, y | 0 | 9 | 4 | 2 | 12 |

(1,4), (2,3), (3,8), (4,0), (5,2)

4. Sketch the following using your graphing calculator and then explain whether it is a function or not a function.

**f(x) = 4x2 + 1**

5. Sketch a graph that would be NOT be considered a function.





7. For h(x) = 10x, find the value of x for which h(x) = 90

6. Evaluate f(x) = 8x + 5 when x = 2

8. The function **f(x) = 10x + 1 represents the cost of a gym membership when paying1 dollar down and 10 dollars a month.**

a. f(2) = 21, interpret this value in terms of context.

b. Find f(6) and interpret this value in terms of context.

11. You get a part time job in order to buy the new shoes. You are making $7.50 an hour.

1. Create a function that models how much you make after x hours.
2. You want to purchase the newest headphones. They cost $150. How many hours must you work in order to have enough money saved?

12. Ms.Naumann has a a gift card with $100. She plans on spending $5 every week.

1. Create a function that models how much money is left on the gift card after x weeks.
2. How long will it take Ms.N to spend her whole gift card.

13. Which of the following scenarios can be represented by the equation: f(x) = 3x + 15

a. you have $15 a spend $3 every week.

b. You pay for a used car for $3 up front and $15 per month.

c. You spend $3 every week.

d. You have $15 in your account and you save $3 every week.