**Chapter 4 Test Study Guide**

1) Use the functions f(x) = 2x and g(x) = x2 + 1 to find the value of the expression.

 f(3) + g(-2)

2) Find the range of the function for the given domain.

 f(x) = x3 + 1; {-2, -1, 0, 1, 2}

3) Find the range of the function for the given domain.

 f(x) = x2 - 2; {-4, -2, 0, 1, 3}

4) A tenth grade class is selling granola bars for a fundraiser. They earn $0.75 for every granola bar that they sell. They have ordered 300 granola bars for the sale. Write a function to determine the profit *P* the class earns for each bar *b* they sell. Find a reasonable domain and range for the function.

5) If f(x) = x2 – 15 and f(a) = 49, what is the value of a? Explain.

6) If f(x) = -2x – 4 and f(m) = 10, what is the value of m? Explain.

**7) List the domain and range, map the relation, and tell whether or not it is a function:**

 **a) {(-2, 1), (3, 6), (2, -3), (4, 1)} b) {(0, 6), (1, -3), (2, 4), (0, 3)}**

8) Write a rule that represents the function.

 {(0,1), (1,5), (2,9), (3,13), (4,17)}

9) Write a rule that represents the function.

 {(0,-1), (1,0), (2,7), (3,26), (4,63)}

10) Write a function rule that represents:

1. 8 less than one third of *x* is *y* b)6 more than the sum of a number and 4 is y

11) Tell whether or not each sequence is arithmetic. Justify your answer. If it is arithmetic, write a function rule to represent it.

1. 6, 12, 18, 24, 30 b) -2, -5, -8, -11, -14 c)3, 6, 12, 24, 48

12) Graph each equation and determine whether the relationship is a function. If it is, write an equation for it.





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| **X** | **Y** |
| **-3** | **2** |
| **-2** | **4** |
| **-1** | **6** |
| **0** | **5** |
| **1** | **2** |

13) Circle the equation that best represents the function:

1. (0, 4), (1, 5), (2, 12), (3, 31), (5, 129)
2. y = 3x + 4
3. y = 2x2 + 3
4. y = x3 + 4
5. y = 3x + 4
6. (0, 0), (1, 1), (2, 3), (3, 7), (4, 15)
7. y = 2x – 1
8. y = x2 – 1
9. y = 2x2 – 1
10. y = 2x - 1