Math 1 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 2 Review** Date\_\_\_\_\_\_\_\_

1. The table below give the number of cats in a household and the number of times the house gets vacuumed per month.
2. Fill in the top row of the table with the independent variable and the bottom with the dependent variable.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | 1 | 3 | 7 | 10 | 20 | 25 | 32 | 100 |
|  | 2 | 6 | 10 | 26 | 30 | 56 | 74 | 82 | 210 |

1. Find the linear regression equation for this data set. Write your answer in function notation.
2. Explain the meaning of your equation’s slope in the context of this data set.
3. Explain the meaning of your equation’s *y*-intercept in the context of this data set.
4. Find and interpret the correlation coefficient.
5. Find out how many times this house would get vacuumed if they had 46 cats.
6. If the house was vacuumed 78 times last month, how many cats were living there?
7. What is the practical domain for this situation? What is the practical range?
8. Use the points (1, 6) and (7, 26) to create an equation in slope-intercept form.
9. Use the points from Part h to create an equation in point-slope form.
10. Would you rather use your equation from Part b or Part i to make predictions about this data set? Explain your choice.

**Arithmetic Sequences Explicit Equation:** 

1. Find the next three terms in the sequence below:



1. Find the 93rd term for the following sequence: 
2. What term of the sequence is -790?
3. Find the missing terms in the arithmetic sequence below:



1. Write the explicit and recursive equations for the following sequences:
2.  Explicit Recursive
3. 
4. Imagine Mr. Shirey gets a job at UPS for the holiday season as a package runner. He gets paid $20 per day, plus $1.25 for each package he delivers.
5. What is the independent variable? What is the dependent variable?
6. What are the practical domain and range for this situation?
7. Write a recursive equation for this situation.
8. Using *D* for their daily pay and *p* for the number of packages delivered, write an explicit equation in function notation that represents the situation above.
9. Explain the meaning of the slope and *y*-intercept as they pertain to this situation.
10. How many deliveries did Mr. Shirey make if he got paid $63.75 on one day?
11. How much money did Mr. Shirey make on a day where he made 72 deliveries?
12. Mr. Shirey made $150 in a two-day period. How many packages did he deliver during that time?