Algebra II Name _____

Functions #6 – Line of Best Fit

Do all work on separate paper!!

1. The table shows the cost of visiting a working ranch for one day and night for different numbers of people.

| Number of People | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|
| Cost (dollars) | 250 | 350 | 450 | 550 | 650 |

a. Can the situation be modeled by a linear equation? Explain.

b. Make a scatterplot and write the equation of the regression line.

c. What is the slope and what does it represent in context to the data?

2. The table shows the cost of a catered lunch buffet for different numbers of people.

| Number of People | Cost (dollars) |
|---|---|
| 12 | 192 |
| 18 | 288 |
| 24 | 384 |
| 30 | 480 |
| 36 | 576 |
| 42 | 672 |

a. Make a scatterplot and write the regression equation that gives the cost of the lunch buffet as a function of the number of people attending.

b. What is the slope and what does it represent?

c. What is the cost of a lunch buffet for 60 people?

3. The table shows the weight of an alligator at various times during a feeding trial.

| Weeks | 0 | 9 | 18 | 27 | 34 | 43 | 49 |
|---|---|---|---|---|---|---|---|
| Weight (lbs) | 6 | 8.6 | 10 | 13.6 | 15 | 17.2 | 19.8 |

a. Make a scatterplot of the data and find the equation of the best fit line.

b. Find the slope and describe what it represents.

c. Use the equation to predict the weight of this alligator at week 52.

4. **Music** The scatterplot shows the number of CDs (in millions) that were sold from 1999 to 2005. If the trend continued, about how many CDs were sold in 2006?