Algebra Line of Best Fit Worksheet Name _____

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) What is the slope and what does it represent?

c) Write an equation that gives the cost as a function of the number of people in the group.

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) What is the slope and what does it represent?

b) Write an equation that gives the cost of the lunch buffet as a function of the number of people attending.

c) What is the cost of a lunch buffet for 120 people?

Make a scatter plot of the data in the table. Draw a line of fit. Write an equation of the line.

3)

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

4) The table shows the number of active woodpecker clusters in a part of the De Soto National Forest in Mississippi.

| Year | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|
| Active Clusters | 22 | 24 | 27 | 27 | 34 | 40 | 42 | 45 | 51 |

a) Make a scatter plot of the data. Represent the x-axis as the number of years **since 1990**.

b) Find the slope and describe what it represents.

c) Write an equation that models the number of active clusters as a function of the number of years since 1990.

d) Use the equation to determine the number of active clusters in the year 2010.

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

| Weeks | 0 | 9 | 18 | 27 | 34 | 43 | 49 |
|---|---|---|---|---|---|---|---|
| Weight in pounds | 6 | 8.6 | 10 | 13.6 | 15 | 17.2 | 19.8 |

a) Make a scatter plot of the data.

b) Find the slope and describe what it represents.

c) Write an equation of the best fitting line.

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

6) The table shows the duration of several eruptions of the geyser Old Faithful and the interval between eruptions.

| Duration (minutes) | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 |
|---|---|---|---|---|---|---|---|---|
| Interval (minutes) | 50 | 57 | 65 | 71 | 76 | 82 | 89 | 95 |

a) Make a scatter plot of the data and draw a line of best fit.

b) Write an equation that models the interval as a function of an eruption's duration.

c) Predict the interval between geysers for a duration of 6 minutes.