

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

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

- a) Use the data table to decide if 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?

- 3) 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   |

- Use technology to make a scatter plot of the data. Represent the x-axis as the number of years **since 1990**.
- Find the slope and describe what it represents.
- Use technology to determine an equation that models the number of active clusters as a function of the number of years since 1990.
- Use the equation to determine the number of active clusters in the year

- 4) The table below shows the weight of an alligator at various times during a medical experiment.

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

- Use technology to make a scatter plot of the data and determine the equation of the line of best fit.
- Determine the slope of this linear function and explain what the slope means in the context of the data.
- Predict the weight of the alligator at week 52