**Linear Regression Notes**                   Name: Key

1)

The table shows the number of pairs of shoes sold by two new employees at a shoe store. Find linear models for each employee's sales. Use the graph of the models to predict the week in which they could sell the same number of pairs of shoes.

Write each equation then graph the system to find the answer.

| Week | 1 | 2 | 3 | 4 |
|------|-----|-----|-----|-----|
| Ed | 50 | 55 | 63 | 67 |
| Jo | 40 | 47 | 56 | 62 |

Ed:
$$y = 5.9x + 44$$

Jo:
$$y = 7.5x + 32.5$$

Solution (7, 86)

In Week 7, both Ed and Jo will sell 86 pairs of shoes.

2)

Annual U.S. Consumption
of Vegetables

| Year | Broccoli (lb/person) | Cucumbers (lb/person) |
|------|------|------|
| 1980 | 1.5 | 3.9 |
| 1985 | 2.6 | 4.4 |
| 1990 | 3.4 | 4.7 |
| 1995 | 4.3 | 5.6 |
| 1998 | 5.1 | 6.5 |
| 1999 | 6.5 | 6.8 |
| 2000 | 6.1 | 6.4 |

Broccoli: $y = .232x + 1.328$

Cucumbers: $y = .145x + 3.673$

Solution (27, 7.6)
1980 + 27 = 2007

In Year 2007, a person will consume 7.6 pounds of each vegetable.