LESSON 4.6 Real-Life Application: When Will I Ever Use This?

For use with the lesson "Fit a Line to Data"

Cellular Phone Use

The invention of the cellular phone has changed the way people communicate. According to figures published by the cellular telecommunications and internet association (CTIA), the cell phone industry has blossomed into a revenue maker of over one hundred billion dollars a year.

The term cellular is used because each geographic region of coverage is broken up into cells of coverage. Each cell has a radio transmitter and control equipment. The original cell phone worked on an analog signal, however newer technology relies on digital technology.

Cell phone use has become so prevalent that many people now see them as intrusive. This has led many schools and businesses to make rules restricting the time and place where cell phones may be used.

The CTIA survey below lists estimated subscribers in thousands.

Year	Subscribers (in Thousands)
1990	5283
1991	7557
1992	11,033
1993	16,009
1994	21,134
1995	33,786
1996	44,043
1997	55,312
1998	69,209

1. Make a scatter plot of the data. Let x represent the number of years since 1990.

2. Find an equation that best fits the data in Exercise 1.

3. Approximate the number of cell phone users in 2000.

4. Make a scatter plot of the data from 1993 to 1998. Let x represent the number of years since 1993.

5. Find an equation that best fits the data in Exercise 4.

6. Approximate the number of cell phone users in 2000 using the new equation.

7. The actual number of cell phone users in 2000 was 109,478 (in thousands). Did the equation from Exercise 2 or Exercise 5 give a better estimate of the actual value?