Scatter Plots and Lines of Best Fit

**Table 2-1**

In 2000, Americans consumed an average 57 pounds more meat than they did annually in the 1950s, and a third fewer eggs

Item	Annual averages					
	1950-59	1960-69	1970-79	1980-89	1990-99	2000
Pounds per capita, boneless-trimmed weight						
Total meats	138.2	161.7	177.2	182.2	189.0	195.2
Red meats	106.7	122.34	129.5	121.8	112.4	113.5
Beef	52.8	69.2	80.9	71.7	63.2	64.4
Pork	45.4	46.9	45.0	47.7	47.6	47.7
Veal and lamb	8.5	6.2	3.5	2.4	1.7	1.4
Poultry	20.5	28.7	35.2	46.2	61.9	66.5
Chicken	16.4	22.7	28.4	36.3	47.9	52.9
Turkey	4.1	6.0	6.8	9.9	13.9	13.6
Fish and shellfish	10.9	10.7	12.5	14.2	14.7	15.2
Number per capita						
Eggs	374	320	285	257	236	250

Note: Totals may not add due to rounding.
Source: USDA's Economic Research Service.

LP#1 - Create a scatter plot using the data from Table 2-1 for the amount of turkey consumed.
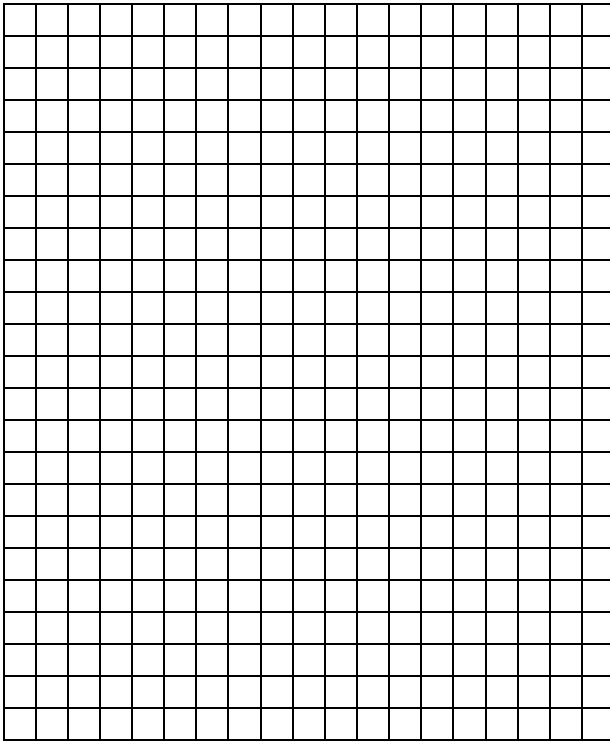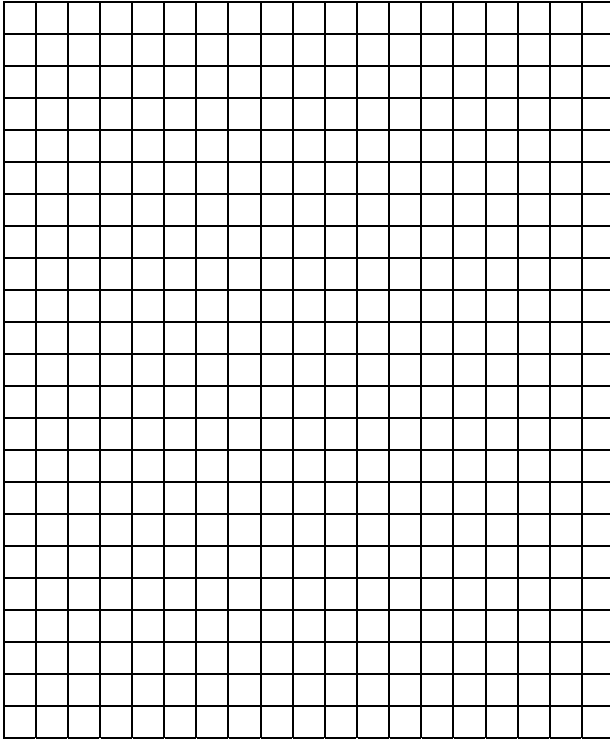
Use the scatter plot and draw a line of best fit.

Use the two points used for determining the line of best fit to create an equation to use for predictions.

Using the equation, predict the amount of turkey that will be consumed in 2010.

LP#2 - Create a scatter plot using the data from Table 2-1 for the amount of chicken consumed.
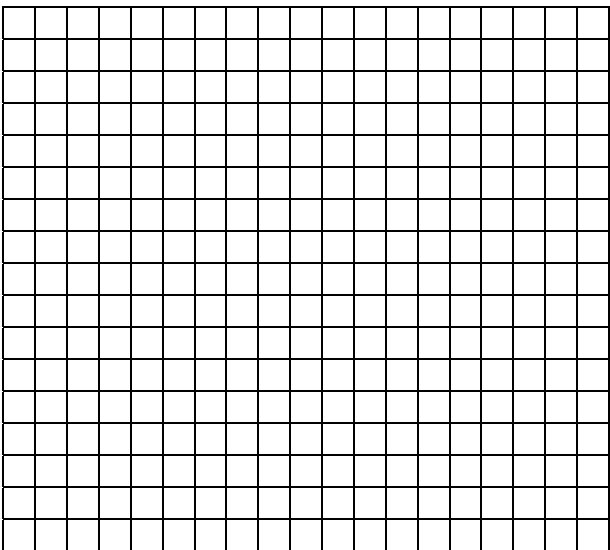
Use the scatter plot and draw a line of best fit.

Use the two points used for determining the line of best fit to create an equation to use for predictions.

Using the equation, predict the amount of chicken that will be consumed in 2010.

LP#3 - Create a scatter plot using the data from Table 2-1 for the amount of fish and shellfish consumed.

Use the scatter plot and draw a line of best fit.

Use the two points used for determining the line of best fit to create an equation to use for predictions.

Using the equation, predict the amount of fish and shellfish that will be consumed in 2010.

Table 2-2

**Americans are drinking less milk, eating more cheese**

Item	Unit	Per capita annual averages					
		1950-59	1960-69	1970-79	1980-89	1990-99	2000
All dairy products[1]	lb	703	619	548	573	571	593
Cheese[2]	lb	7.7	9.5	14.4	21.5	26.7	29.8
Cottage cheese	lb	3.9	4.6	4.9	4.1	2.9	2.6
Frozen dairy products	lb	23.0	27.5	27.8	27.4	28.8	27.8
Ice cream	lb	18.1	18.3	17.7	17.7	16.0	16.5
Lowfat ice cream	lb	2.7	6.2	7.6	7.2	7.5	7.3
Sherbet	lb	1.3	1.5	1.5	1.3	1.3	1.2
Other (including frozen yogurt)	lb	1.0	1.5	1.0	1.2	4.0	3.1
Nonfat dry milk	lb	4.9	5.9	4.1	2.4	3.1	3.4
Dry whey	lb	.2	.6	2.1	3.2	3.5	3.4
Condensed and evaporated milks	lb	21.6	15.7	9.4	7.5	7.3	5.8
Cream products	1/2 pt	18.1	13.3	10.1	12.8	15.7	18.6
Yogurt	1/2 pt	0.2	0.7	3.2	6.5	8.5	9.9
Beverage milk	gal	36.4	32.6	29.8	26.5	24.3	22.6
Whole	gal	33.5	28.8	21.7	14.3	9.1	8.1
Lower fat	gal	2.9	3.7	8.1	12.2	15.3	14.5

Note: Totals may not add due to rounding.
[1]Milk-equivalent, milkfat basis; includes butter. Individual items are on a product-weight basis.
[2]Natural equivalent of cheese and cheese products; excludes full-skim American, cottage, pot, and baker's cheese. Source: USDA's Economic Research Service.

R#1 - Create a scatter plot using the data from Table 2-2 for the amount of cheese consumed.
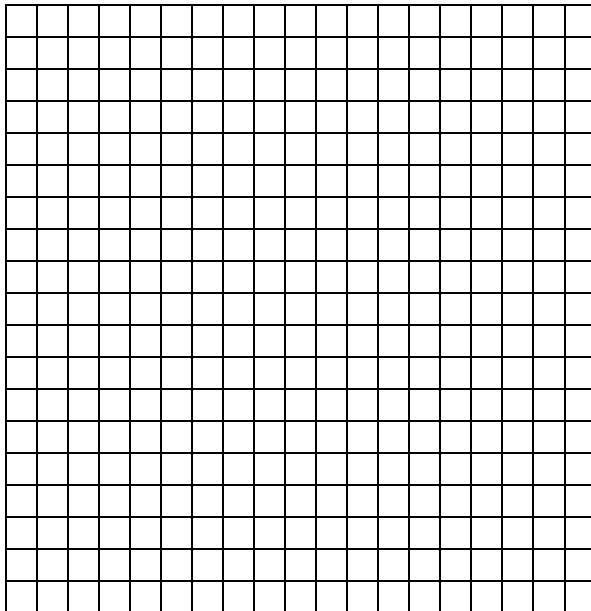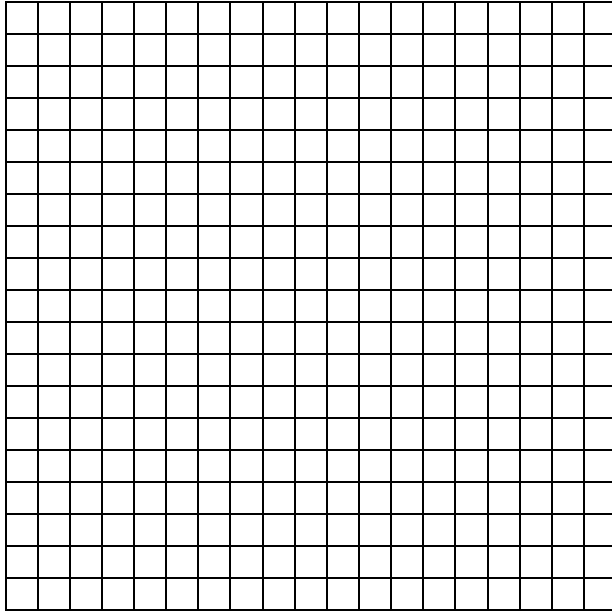

Use the scatter plot and draw a line of best fit.

Use the two points used for determining the line of best fit to create an equation to use for predictions.

Using the equation, predict the amount of cheese that will be consumed in 2010.

Lesson 7-3

R#2 - Create a scatter plot using the data from Table 2-2 for the amount of all dairy products consumed.
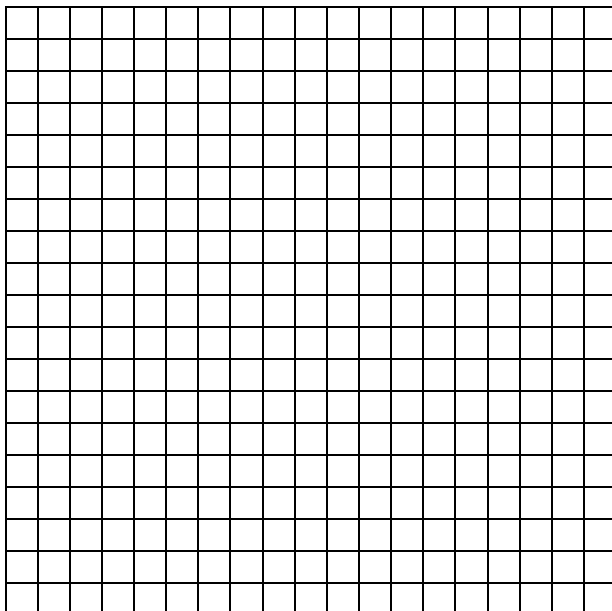
Use the scatter plot and draw a line of best fit.

Use the two points used for determining the line of best fit to create an equation to use for predictions.

Using the equation, predict the amount of all dairy products that will be consumed in 2010.

R#3 - Create a scatter plot using the data from Table 2-2 for the amount of all dairy products consumed.

Use the scatter plot and draw a line of best fit.

Use the two points used for determining the line of best fit to create an equation to use for predictions.
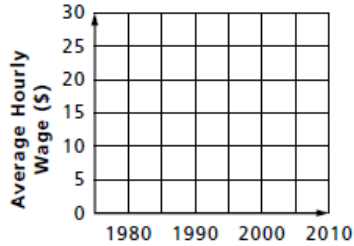
Using the equation, predict the amount of all dairy products that will be consumed in 2010.

Lesson 7-3

Homework

1)

CONSTRUCTION For Exercises 1 and 2, use the table that shows the average hourly wage of U.S. construction workers from 1980 to 1999.

1. Make a scatter plot and draw a best-fit line.

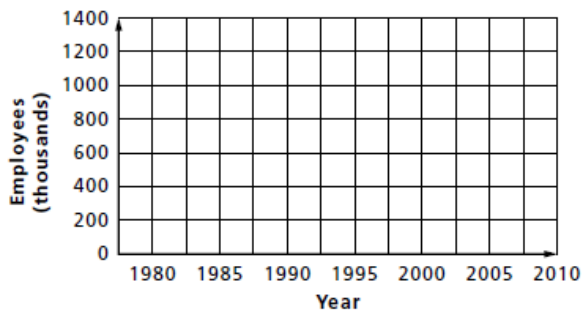| Year	Average Hourly Earnings ($)
1980	9.94
1985	12.32
1990	13.77
1995	15.09
1999	17.13

Source: U.S. Census Bureau

2. Use the best-fit line to predict the average hourly wage of construction workers in 2010.

2)

MINING For Exercises 3 and 4, use the table that shows the number of persons employed in mining from 1980 to 1999.

3. Make a scatter plot and draw a best-fit line.

Year	Employees (thousands)
1980	1027
1985	927
1990	709
1995	581
1999	535

Source: U.S. Census Bureau

Source: U.S. Census Bureau

4. Write an equation for the best-fit line and use it to predict the number of persons employed in mining in 2010.
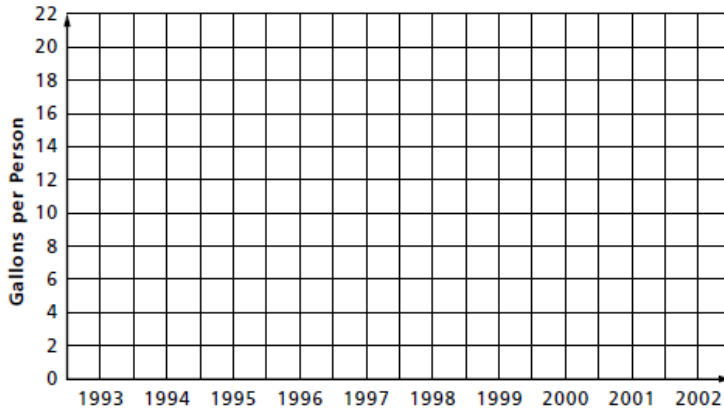
3)

BEVERAGES For Exercises 1 and 2, use the table that shows the amount of whole milk consumed per person in the United States from 1993 to 1997.

Year	Gallons per Person
1993	9.4
1994	10.7
1995	11.6
1996	12.5
1997	13.1

Source: U.S. Census Bureau

1. Make a scatter plot and draw a best-fit line.

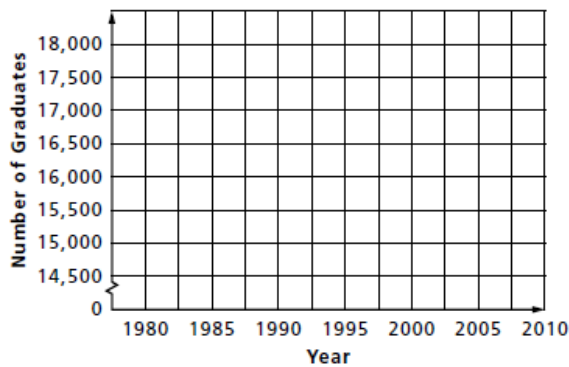2. Use the best-fit line to predict the amount of whole milk consumed per person in 2002.

4)

EDUCATION For Exercises 3 and 4, use the table that shows the number of students graduating from medical school in the United States from 1980 to 2000.

Year	Graduates
1980	15,113
1985	16,318
1990	15,398
1995	15,888
2000	16,112

Source: U.S. Census Bureau

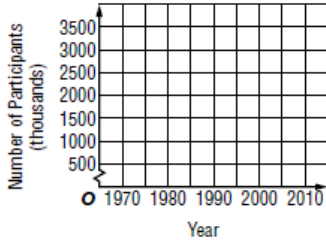3. Make a scatter plot and draw a best-fit line.

Source: U.S. Census Bureau

4. Write an equation for the best-fit line and use it to predict the number of medical school graduates in 2010.

5)

Use the table that shows the number of girls who participated in high school athletic programs in the United States from 1973 to 1998.

1. Make a scatter plot and draw a best-fit line.

Year	1973	1978	1983	1988	1993	1998
Number of Participants (thousands)	817	2083	1780	1850	1997	2570

Source: U.S. Census Bureau

2. Use the best-fit line to predict the number of female participants in 2008.

6)

Make a scatter plot and draw a best-line for the data in the table

Year	Percent of Population	Year	Percent of Population
1970	60.4	1995	66.6
1980	63.8	1997	67.1
1985	64.8	1998	67.1
1990	66.5	1999	67.1

Source: U.S. Census Bureau