2-5   Practice

Scatter Plots and Lines of Regression

For Exercises 1 and 2, complete parts a–c.

a. **Make a scatter plot and a line of fit, and describe the correlation.**

b. **Use two ordered pairs to write a prediction equation.**

c. **Use your prediction equation to predict the missing value.**

1. **FUEL ECONOMY** The table gives the weights in tons and estimates the fuel economy in miles per gallon for several cars.

| Weight (tons)	1.3	1.4	1.5	1.8	2	2.1	2.4
Miles per Gallon	29	24	23	21	?	17	15

Fuel Economy Versus Weight
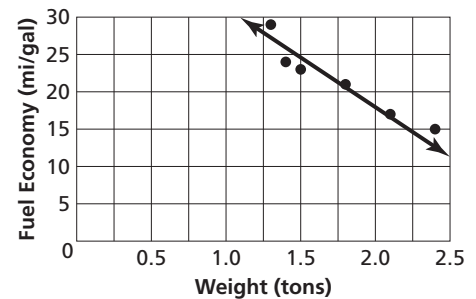
1b. Sample answer: using (1.4, 24) and (2.4, 15), $y = -9x + 36.6$

1c. Sample answer: 18.6 mi/gal

2. **ALTITUDE** As Anchara drives into the mountains, her car thermometer registers the temperatures (°F) shown in the table at the given altitudes (feet).

Altitude (ft)	7500	8200	8600	9200	9700	10,400	12,000
Temperature (°F)	61	58	56	53	50	46	?

Temperature Versus Altitude
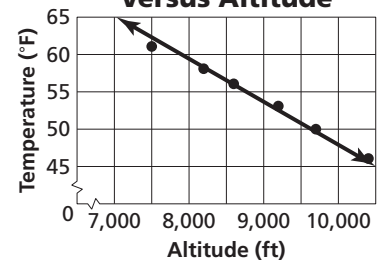

2b. Sample answer: using (7500, 61) and (9700, 50), $y = -0.005x + 98.5$

2c. Sample answer: 38.5°F

3. **HEALTH** Alton has a treadmill that uses the time on the treadmill to estimate the number of Calories he burns during a workout. The table gives workout times and Calories burned for several workouts. Find an equation for and graph a line of regression. Then use the function to predict the number of Calories burned in a 60-minute workout.

Time (min)	18	24	30	40	42	48	52	60
Calories Burned	260	280	320	380	400	440	475	?

Burning Calories
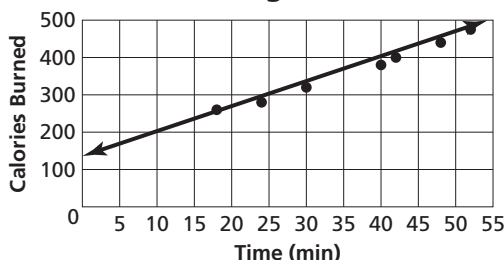
Sample answer: line of Regression $y = 6,395x + 132.95$; 516.65 Calories

Lesson 2-5