

2-5 Skills Practice

Scatter Plots and Lines of Regression

For Exercises 1–3, complete parts a–c.

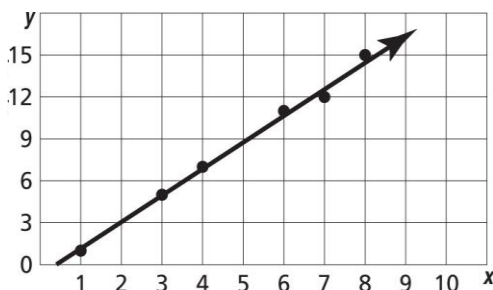
a. Make a scatter plot and a line of fit, and describe the correlation.

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

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

1.

x	y
1	1
3	5
4	7
6	11
7	12
8	15
10	?



Positive Correlation

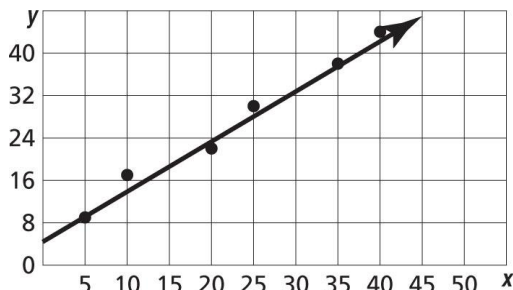
1a.

1b. Sample answer using (1, 1) and (8, 15): $y = 2x - 1$

1c. Sample answer: 19

2.

x	y
5	9
10	17
20	22
25	30
35	38
40	44
50	?



Positive Correlation

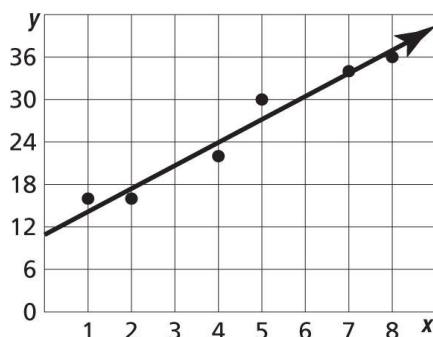
2a.

2b. Sample answer using (5, 9) and (40, 44): $y = x + 4$

2c. Sample answer: 54

3.

x	y
1	16
2	16
3	?
4	22
5	30
7	34
8	36



Positive Correlation

3a.

3b. Sample answer using (2, 16) and (7, 34): $y = 3.6x + 8.8$

3c. Sample answer: 19.6

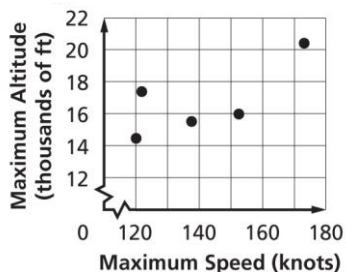
2-5 Word Problem Practice

Scatter Plots and Lines of Regression

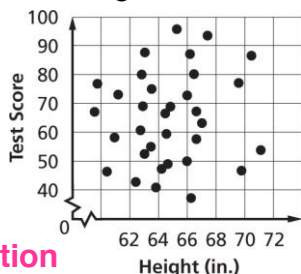
1. **AIRCRAFT** The table shows the maximum speed and altitude of different aircraft. Draw a scatter plot of this data.

Max. Speed (knots)	121	123	137	173	153
Max. Altitude (1000 feet)	14.2	17.0	15.3	20.7	16.0

Source: RisingUp Aviation



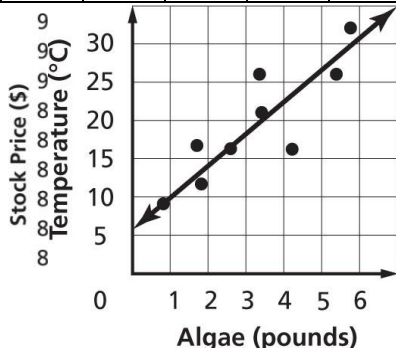
2. **TESTING** The scatter plot shows the height and test scores of students in a math class. Describe the correlation between heights and test scores.



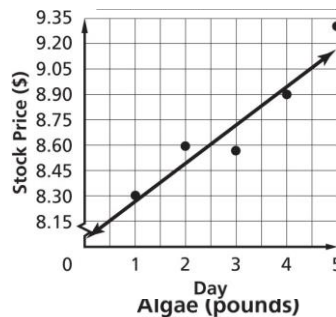
no correlation

3. **STOCKS** The prices of a technology stock over 5 days are shown in the table. Draw a scatter plot of the data and a line of fit.

Day	1	2	3	4	5
Price	8.30	8.60	8.55	8.90	9.30

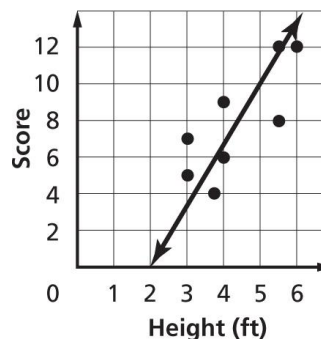


4. **ALGAE** One type of algae grows fastest at 31°C. The scatter plot shows data recording the amount of algae and the temperature of the water in various aquarium tanks. Draw a line of fit for this data and write a prediction equation. Will this prediction equation be accurate for temperatures above 31°C?



Sample answer: $y = 4x + 6$; the equation may not be valid for extremely high temperatures

5. **SPORTS** The scatter plot shows the height and score of different contestants shooting darts.



- a. What is the equation of the line of fit?

Sample answer: $y = \frac{8}{3}x - \frac{10}{3}$

- b. What do you predict someone 5 feet tall would score?

Sample answer: 10 points