

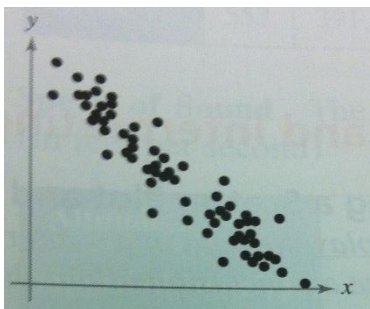
7.1 Worksheet

1. Which of the following values could not represent a correlation coefficient? Explain why?

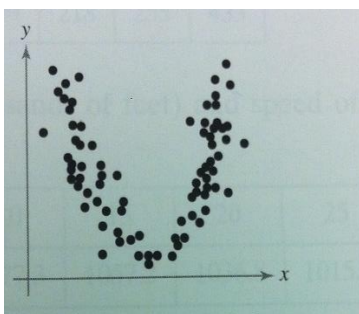
- a) $r = -0.902$
- b) $r = 0.887$
- c) $r = -1.045$
- d) $r = 0.023$

Graphical Analysis In Exercises 2-5, the scattered plots of paired data sets are shown. Determine whether there is a positive linear correlation, negative linear correlation or no linear correlation between the variables.

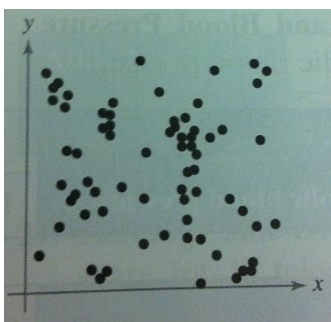
2.



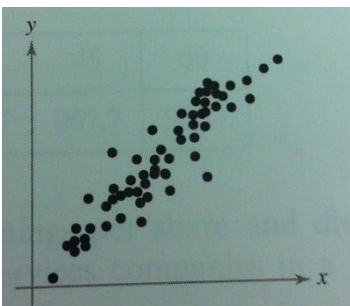
3.



4.



5.



In Exercises 6 and 7, identify the explanatory variable and the response variable.

6. A nutritionist wants to determine if the amount of water consumed each day by persons of the same weight and on the same diet can be used to predict individual weight loss.
7. An insurance company hires an actuary to determine whether the number of hours of safety driving classes can be used to predict the number of driving accidents for each driver.

Constructing a Scatter Plot and Determining Correlation In Exercises 8-12 (a) display the data in a scatter plot, (b) calculate the correlation coefficient r , and (c) make a conclusion about the type of correlation.

8. **Age and Blood Pressure** The ages (in years) of 10 men and their systolic blood pressures

Age, x	16	25	39	45	49
Systolic Blood Pressure, y	109	122	143	132	199

Age, x	64	70	29	57	22
Systolic Blood Pressure, y	185	199	103	175	118

9. **Age and Vocabulary** The ages (in years) of 11 children and the number of word in there vocabulary

Age, x	1	2	3	4	5	6
Vocabulary Size, y	3	440	1200	1500	2100	2600

Age, x	3	5	2	4	6
Vocabulary Size, y	110	200	500	1525	2500

10. **Movie Budgets and Grosses** The budget (in millions of dollars) and worldwide gross (in millions of dollars) for eight of the most expensive movies ever made

Budget, x	207	204	200	200	180	175	175	170
Gross, y	553	391	1835	784	749	218	255	433

11. **Speed of Sound** The altitude (in thousands of feet) and the speed of sound (in feet per second)

Altitude, x	0	5	10	15	20	25
Speed of Sound, y	1116.3	1096.9	1077.3	1057.2	1036.8	1015.8

Altitude, x	30	35	40	45	50
Speed of Sound, y	994.5	969.0	967.7	967.7	967.7

12. **Earnings and Dividends** The earnings per share and the dividends per share for 10 telecommunications services companies in a recent year

Earnings per share, x	2.34	1.96	1.39	3.07	0.65
Dividends per share, y	1.33	1.07	1.15	0.25	1.00

Earnings per share, x	5.21	0.88	3.23	2.54	1.03
Dividends per share, y	1.00	1.59	1.20	1.62	0.20