

Lesson 1-5

Problem

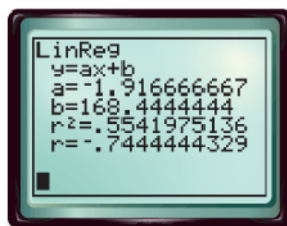
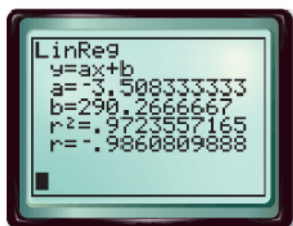
RECREATION The manager of a ski resort rents skis and snowboards to customers. The table shows the number of skis and snowboards that are typically rented based on the outside temperature.

Outside temperature	Ski rentals	Snowboard rentals
40°F	152	99
38°F	156	94
36°F	160	80
34°F	174	108
32°F	175	115
30°F	190	110
28°F	192	120
26°F	195	126
24°F	208	112

- Is the correlation between outside temperature and equipment rentals positive or negative, strong or weak?
- Predict the type of equipment with a stronger correlation to outside temperature.
- Use a graphing utility to identify the coefficient of correlation for temperature and ski rentals and the coefficient of correlation for temperature and snowboard rentals.
- Were your predictions in parts a and b correct?

Solution

- As the outside temperature decreases, equipment rentals increase. The correlation is strong and negative, so the coefficient of correlation will be close to -1 .
- As the outside temperature decreases, the number of ski rentals increases the most.
- Enter the temperatures in a list, L1; ski rentals in a second list, L2; and snowboard rentals in a third list, L3. To find the coefficient of correlation for outside temperature and ski rentals, use L1 and L2. Use L1 and L3 to find the coefficient of correlation for outside temperature and snowboard rentals. The calculator screens show that $r = -0.99$ for ski rentals and $r = -0.74$ for snowboard rentals.



- The correlation is strong and negative. The coefficient r is negative and close to -1 for both. However, the number of ski rentals show a stronger relationship.