@HomeTutor
classzone.com
Keystrokes

MODELING DATA The *correlation coefficient* r for a set of paired data measures how well the best-fitting line fits the data. You can use a graphing calculator to find a value for r.

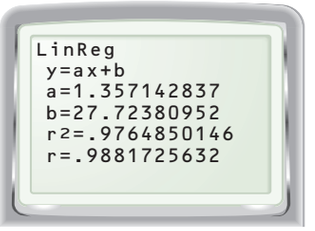
For r close to 1, the data have a strong positive correlation. For r close to -1, the data have a strong negative correlation. For r close to 0, the data have relatively no correlation.

EXAMPLE 2 Find the best-fitting line

Find an equation of the best-fitting line for the scatter plot from Example 1. Determine the correlation coefficient of the data. Graph the best-fitting line.

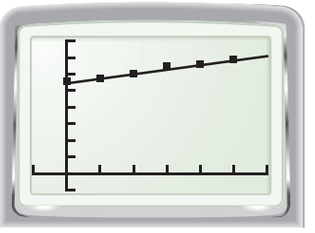
STEP 1 Perform regression

Press STAT. From the CALC menu, choose LinReg(ax+b). The a- and b-values given are for an equation of the form $y = ax + b$. Rounding these values gives the equation $y = 1.36x + 27.7$. Because r is close to 1, the data have a strong positive correlation.



STEP 2 Draw the best-fitting line

Press Y= and enter $1.36x + 27.7$ for y_1. Press GRAPH.



PRACTICE

In Exercises 1–5, refer to the table, which shows the total sales from men's clothing stores in the United States from 1997 to 2002.

Year	1997	1998	1999	2000	2001	2002
Sales (billions of dollars)	10.1	10.6	10.5	10.8	10.3	9.9

1. Make a scatter plot of the data. *Describe* the correlation.
2. Find the equation of the best-fitting line for the data.
3. Draw the best-fitting line for the data.

DRAW CONCLUSIONS

4. What does the value of r for the equation in Exercise 2 tell you about the correlation of the data?
5. **PREDICT** How could you use the best-fitting line to predict future sales of men's clothing? *Explain* your answer.