

EXAMPLE 2 Recognizing a Linear Pattern

The table relates a man’s shoe size to the length of his foot.

	A	B
	Foot Length (inches)	Shoe Size
1		
2	9.30	6.0
3	9.47	6.5
4	9.64	7.0
5	9.81	7.5
6	9.98	8.0
7	10.15	8.5
8	10.32	9.0
9	10.49	9.5
10	10.66	10.0
11	10.83	10.5
12	11.00	11.0
13	11.17	11.5
14	11.34	12.0
15	11.51	12.5
16	11.68	13.0
17	11.85	13.5
18	12.02	14.0
19	12.19	14.5
20	12.36	15.0



To measure your foot, trace it on a piece of paper. Mark the front and back of your foot. Then measure the length.

- a. Does the table represent a linear pattern? Explain.
- b. Use a spreadsheet to graph the data. Is the graph linear?

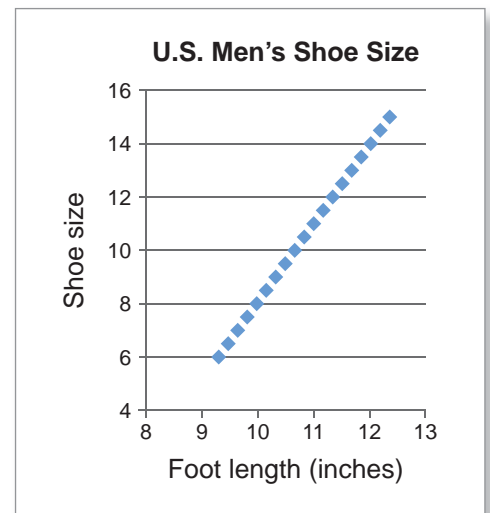
SOLUTION

- a. To determine whether the table represents a linear pattern, find the differences between consecutive terms.

	A	B
	Foot Length (inches)	Shoe Size
1		
2	9.30	6.0
3	9.47	6.5
4	9.64	7.0
5	9.81	7.5
6	9.98	8.0

0.17
0.17
0.17
0.17

Notice that each time the foot length increases by 0.17 (about 1/6) inch, the shoe size increases by a half size. So, the pattern is linear.



- b. The points on the graph *do* lie on a line. So, the graph is linear.

✓ Checkpoint

Help at Math.andYOU.com

Use the table at *Math.andYou.com* that relates a woman’s shoe size to the length of her foot.

- c. Does the table represent a linear pattern? Explain.
- d. Use a spreadsheet to graph the data. Is the graph linear?