

## EXAMPLE 2 Graph a function

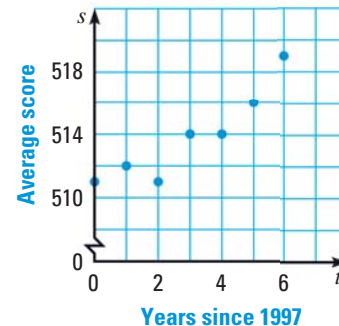
**SAT SCORES** The table shows the average score  $s$  on the mathematics section of the Scholastic Aptitude Test (SAT) in the United States from 1997 to 2003 as a function of the time  $t$  in years since 1997. In the table, 0 corresponds to the year 1997, 1 corresponds to 1998, and so on. Graph the function.

Years since 1997, $t$	0	1	2	3	4	5	6
Average score, $s$	511	512	511	514	514	516	519

### Solution

**STEP 1** Choose a scale. The scale should allow you to plot all the points on a graph that is a reasonable size.

- The  $t$ -values range from 0 to 6, so label the  $t$ -axis from 0 to 6 in increments of 1 unit.
- The  $s$ -values range from 511 to 519, so label the  $s$ -axis from 510 to 520 in increments of 2 units.



**STEP 2** Plot the points.

### READING

The symbol  $\downarrow$  on the vertical number line represents a break in the axis.



### GUIDED PRACTICE for Example 2

2. **WHAT IF?** In Example 2, suppose that you use a scale on the  $s$ -axis from 0 to 520 in increments of 1 unit. Describe the appearance of the graph.

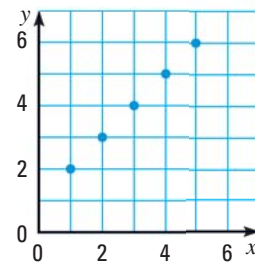
## EXAMPLE 3 Write a function rule for a graph

Write a rule for the function represented by the graph. Identify the domain and the range of the function.

### Solution

**STEP 1** Make a table for the graph.

$x$	1	2	3	4	5
$y$	2	3	4	5	6



**STEP 2** Find a relationship between the inputs and the outputs. Notice from the table that each output value is 1 more than the corresponding input value.

**STEP 3** Write a function rule that describes the relationship:  $y = x + 1$ .

- A rule for the function is  $y = x + 1$ . The domain of the function is 1, 2, 3, 4, and 5. The range is 2, 3, 4, 5, and 6.