Two important factors in determining whether a graph gives a correct impression of data are:

- how the scale is chosen and
- whether the entire scale is shown.

The data at the right can be shown in a bar graph.

In the first graph, the scale is in multiples of 1,000. The entire scale from 0 through 8,000 is shown. The graph accurately compares the numbers of universities in the two countries.

In the second graph, the scale is in multiples of 500. There is a break in the vertical scale. The graph gives a misleading comparison between the two countries.

Use the bar graphs above for Exercises 1–4.

1. From which graph is it easier to tell that India has about twice the number of universities as the United States? **the first graph**

2. In the second graph, about how many times the number of U.S. universities does India appear to have? **about 9 times**

3. Which graph makes it easier to estimate the number of universities in each country? Why? **The second graph; since the scale is smaller, the bars can be read more accurately.**

4. Why does the second graph give a misleading impression of the data? **By using the break, most of the bar for the United States has been left out.**