

Statistics is the science of collecting, organizing, analyzing, and interpreting data. A **statistical question** is one for which you do not expect to get a single answer. Instead, you expect a variety of answers, and you are interested in the *distribution* and *tendency* of those answers.

Identifying Statistical Questions

Determine whether the question is a statistical question. Explain.

- a. How many countries start with the letter Z?

▶ Because there is only one answer, it is not a statistical question.

- b. How much do bags of pretzels cost at the grocery store?

▶ Because you can anticipate that the prices will vary, it is a statistical question. The table at the right may represent prices of several bags of pretzels at a grocery store.

Prices	
\$0.99	\$2.99
\$1.99	\$2.99
\$1.99	\$4.29

- c. How many days does your school have off for spring break this year?

▶ Because there is only one answer, it is not a statistical question.

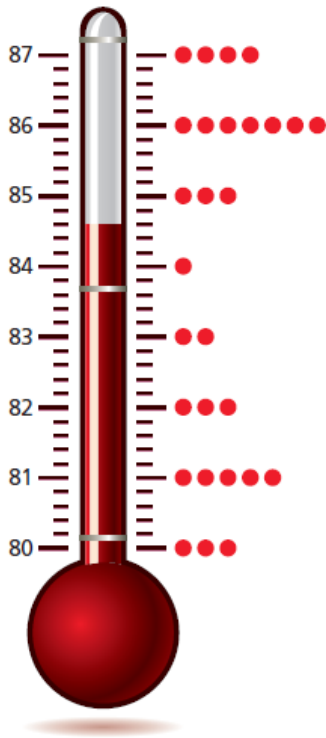
Try It Determine whether the question is a statistical question. Explain.

1. What types of cell phones do students have in your class?
2. How many desks are in your classroom?
3. How much do virtual-reality headsets cost?
4. How many minutes are in your lunch period?

A *dot plot* uses a number line to show the number of times each value in a data set occurs. Dot plots show the *spread* and the *distribution* of a data set.

EXAMPLE 2

Using a Dot Plot



You record the high temperature every day while at summer camp in August. Then you create the vertical dot plot.

- a. Find and interpret the number of data values on the dot plot.

▶ There are 28 data values on the dot plot. So, you were at camp 28 days, or 4 weeks.

- b. How can you collect these data? What are the units?

▶ You can collect these data with a thermometer. The units are degrees Fahrenheit ($^{\circ}\text{F}$).

- c. Write a statistical question that you can answer using the dot plot. Then answer the question.

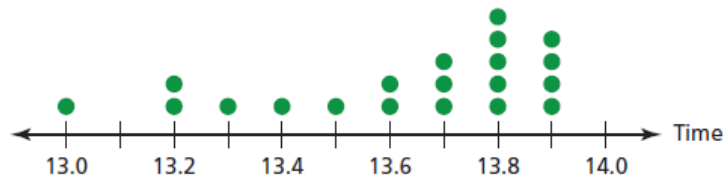
One possible statistical question is,

“What is the daily high temperature in August?”

▶ The high temperatures are spread out with about half of the temperatures around 81°F and half of the temperatures around 86°F .

Try It

5. Repeat parts (a)–(c) using the dot plot below that shows the times of students in a 100-meter race.



PEAK, CLUSTER, GAP

Modeling Real Life

Your teacher asks you, “What is the mass of a typical mouse?” You conduct a science experiment on house mice. Use the data in the table to answer the question.

Masses (grams)			
20	19	21	20
18	20	27	21
28	23	20	19
20	21	18	27
19	22	21	20

