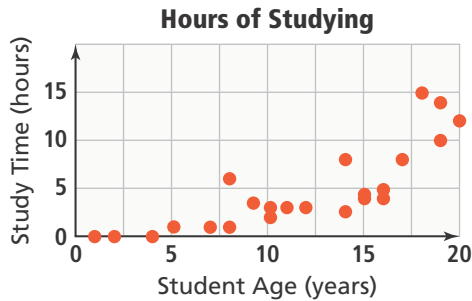




## UNDERSTAND

8. **Communicate Precisely** Does the scatterplot below relate to a statistical question? Explain.



9. **Make Sense and Persevere** At the end of the month, a restaurant manager used the total food sales for the month and the total number of customers for the month to calculate that the mean amount spent per customer during that month was \$12.59. Is this value a statistic or a parameter? Explain.
10. **Error Analysis** Describe and correct the error a student made in responding to the question regarding the following scenario.

A Detroit, Michigan, radio station polled its listeners about whether they supported a citywide tax increase to renovate the city's professional football stadium to determine whether city residents support the increase. What are the sample and the population in this scenario?

The sample is the listeners of the radio station.

The population is all the registered voters in the state of Michigan.

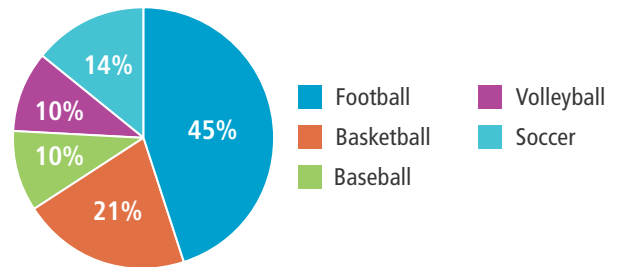


11. **Higher Order Thinking** Write a response to the following items regarding statistical variables.
- Write a statistical question that uses a categorical variable.
  - Write a statistical question that uses a quantitative variable.

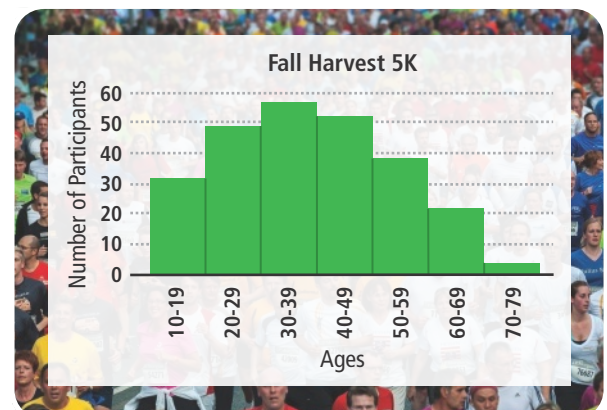
## PRACTICE

12. Is the given question a statistical question? Explain. **SEE EXAMPLE 1**
- "What is the tallest building in Chicago, Illinois?"
  - "What is the most popular store in the Turtlecreek Mall among teenagers?"
13. What type of statistical variable is represented by the graph shown? **SEE EXAMPLE 2**

**Most Popular H.S. Sport to Watch**



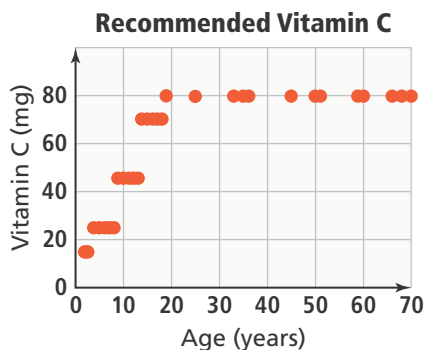
14. A biology teacher wants to know which dissection his students liked best this semester, so he randomly selects eight students from each of his five classes to participate in a survey.
- What is the sample in this situation?
  - What is the population? **SEE EXAMPLE 3**
15. The data below were collected from all race participants to answer the question, "What is the average age of runners in the Fall Harvest 5K?" Does this histogram represent data related to a parameter or statistic? Explain your response. **SEE EXAMPLE 4**



**APPLY**

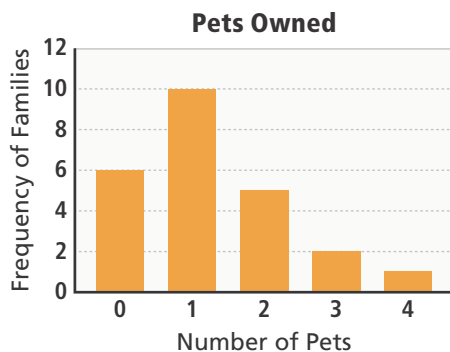
16. Is the given question a statistical question? Explain.
- "Which is the most popular category of children's literature: biography, science fiction, fantasy, or mystery?"
  - "For which category of children's literature is J.K. Rowling best known?"

17. **Make Sense and Persevere** Can the graph below be helpful in answering a statistical question? Explain.



18. **Use Structure** What type of statistical variable is represented by the following question and corresponding graph?

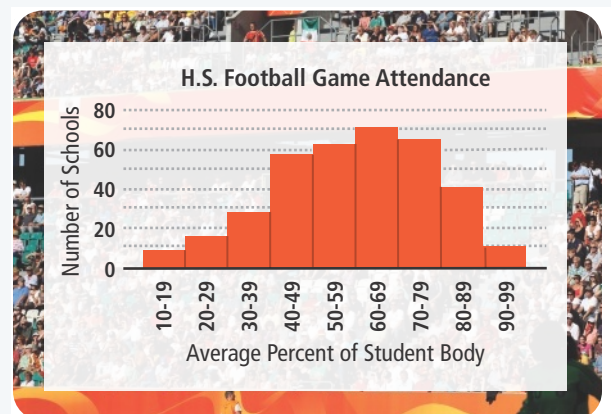
"How many pets does your family own?"



19. **Look For Relationships** Ms. Lee wants to know what kinds of things her students do to prepare for her tests. Ms. Lee placed the names of her students into a box. To determine who she would ask about their study habits she asked a student to draw names from the box.
- What is the sample in this situation?
  - What is the population?

**ASSESSMENT PRACTICE**

20. The average length of all the trout in a river is 60 cm. This data summary represents a \_\_\_\_\_. (parameter/statistic)
21. **SAT/ACT** If the Hamilton High School freshmen class is the sample in a statistical study, then which is **not** a possible population for the study?
- the student body of Hamilton High School
  - the students in Hamilton High School's district
  - the students in Ms. Anderson's science class
  - all freshmen students in the state
22. **Performance Task** A state randomly questioned some of its high schools about the average percentages of their students who attend home football games. The results are summarized in the histogram below.



**Part A** Describe the population and the sample for these data. Are these data quantitative or categorical? Explain.

**Part B** What is an example of a statistical question that could be answered with these data?

**Part C** Joshua was surprised that the median of the data was not a much lower number. What is a possible reason that Joshua could be surprised by these results?