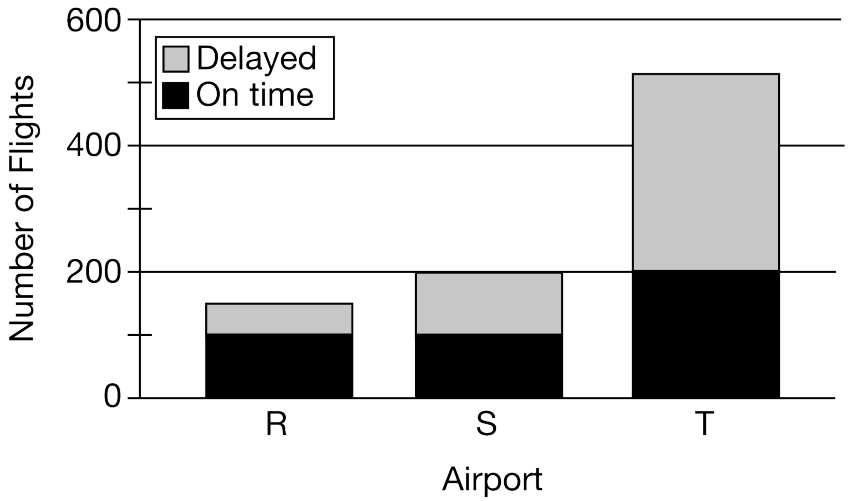
Representing Two Categorical Variables Quiz

1. The following segmented bar chart shows the number of flights that were either on time or delayed at three different airports on one day.



Which of the following statements is supported by the bar chart?

(A) Airport T has the greatest percentage of on-time flights compared to the other two airports.

(B) Airport R has the least percentage of on-time flights compared to the other two airports.

(C) The number of on-time flights at Airport S is half the number of on-time flights at Airport T. ✓

(D) The number of on-time flights at Airport R is less than the number of on-time flights at Airport S.

(E) The number of flights at Airport T is equal to the total number of flights at Airports R and S combined.

Answer C

Correct. Airport S has 100 on-time flights, and Airport T has 200 on-time flights. Since 100 is one-half of 200, Airport S has one-half the number of on-time flights that Airport T has.

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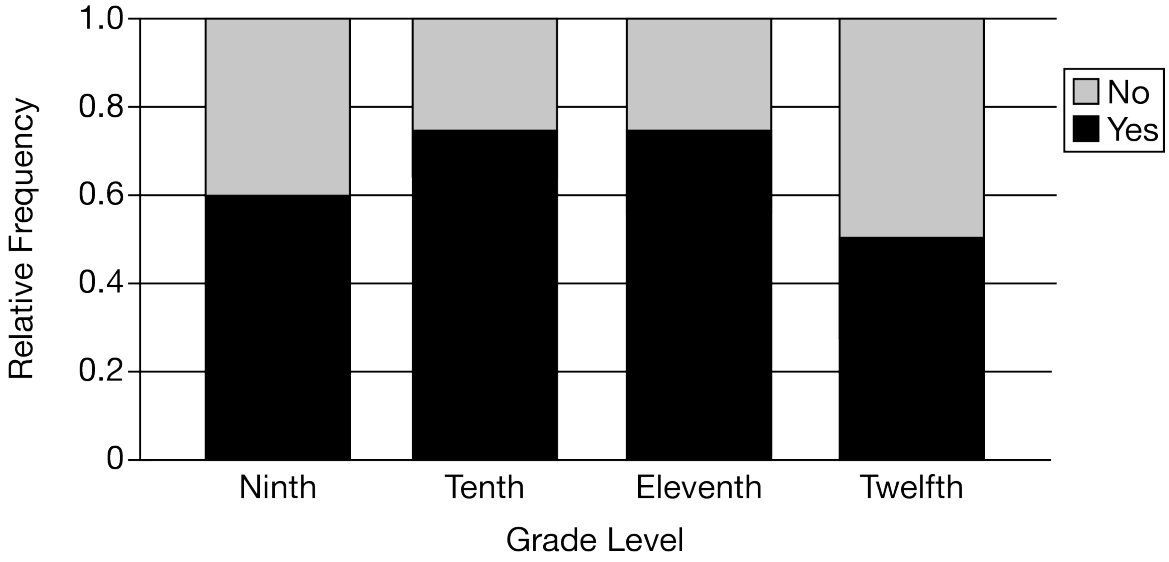
2. The following bar chart displays the relative frequency of responses of students, by grade level, when asked, "Do you volunteer in a community-service activity?"



Which of the following statements is not supported by the bar chart?

(A) More than 60% of both tenth-grade and eleventh-grade students responded yes.

(B) Twelfth-grade students had the least percentage of students respond yes.

(C) Less than 40% of tenth-grade students responded no.

(D) The number of tenth-grade students who responded yes was greater than the number of ninth-grade students who responded yes. ✓

(E) The percentage of eleventh-grade students who responded no was less than the percentage of ninth-grade students who responded no.

Answer D

Correct. The statement is not supported by the bar chart. The graph only gives information about the *percentage* of students who responded yes or no. The graph gives no information on the *number* of students who responded.

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3. The following table shows the data collected from students in grades 3 and 4 in an elementary school about their favorite types of pets.

	Cats	Dogs	Birds	Other	Total
Grade 3	25	60	5	15	105
Grade 4	35	50	15	10	110
Total	60	110	20	25	215

Which of the following statements is supported by the table?

(A) Dogs were the type of pet chosen most often by the students at the elementary school. ✓

(B) There were more students surveyed in grade 3 than in grade 4.

(C) The percentage of students who chose cats as their favorite pet was 60%.

(D) The percentage of students in grade 3 who chose dogs as their favorite pet was 55%.

(E) Birds were the type of pet chosen least often by the students in grade 4.

Answer A

Correct. The number of dogs (110) is greater than the number of cats (60), birds (20), or other pets (25), so dogs were chosen most often.