

Grade 8 - Two-Way Tables and Relative Frequency - Quiz

Common Core 8.SP.A.4 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

Pick the best answer for each of the 10 questions about two-way tables, relative frequencies and association between two categorical variables (Common Core 8.SP.A.4).
Read each question carefully, then read the explanation to learn from any mistake.

Grade 8 · Common Core State Standards: **8.SP.A.4**

Questions

Question 1

	Yes	No	Total
Group 1	10	20	30
Group 2	15	5	20
Total	25	25	50

Survey.

How many people are in Group 2?

- A. 15
- B. 20
- C. 25
- D. 5

Question 2

In a two-way table, a total on the edge is called a

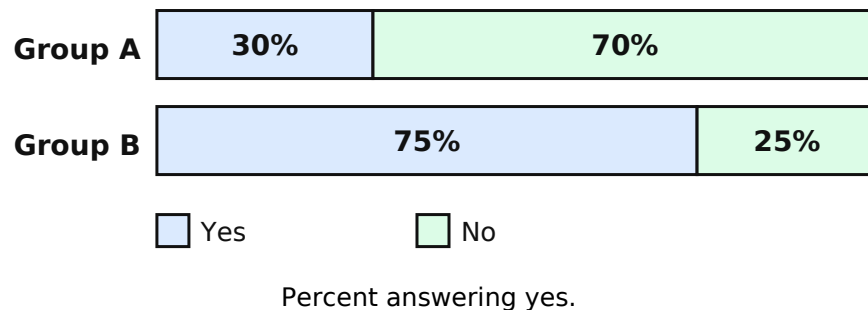
- A. joint frequency
- B. relative frequency
- C. outlier
- D. marginal frequency

Question 3

In a class of 25, 10 are in chess club. What is the relative frequency of chess club members?

- A. 10%
- B. 25%
- C. 40%
- D. 60%

Question 4



Do the bars show an association between the group and the answer?

- A. No, because both bars have a total of 100%
- B. No, because Group A is smaller
- C. Cannot tell
- D. Yes, the percents are very different

Question 5

40 of 50 boys and 30 of 50 girls like a game. The percents are

- A. 80% and 60%
- B. 40 and 30
- C. 80% and 30%
- D. 60% and 80%

Question 6

Row percents are almost equal in two rows. This suggests

- A. a strong association
- B. little or no association
- C. an outlier
- D. a cause

Question 7

	Yes	No	Total
A	18	12	30
B	14	36	50
Total	32	48	80

Survey.

What percent of row A answered yes?

- A. 18%
- B. 36%
- C. 60%
- D. 56%

Question 8

A joint frequency is

- A. a row total
- B. a count in a cell of the table
- C. a column total
- D. a percent of all

Question 9

Which statement is true about association in a two-way table?

- A. It does not prove cause and effect
- B. It proves cause and effect
- C. It needs three variables
- D. It only works for numbers

Question 10

Of 60 students, 21 walk to school. What is the relative frequency of walkers?

- A. 35%
- B. 21%
- C. 40%
- D. 65%

Answers

1. **B** - $15 + 5 = 20$.
2. **D** - Marginal frequencies are the row and column totals.
3. **C** - $10/25 = 0.40$.
4. **D** - 30% yes versus 75% yes is a large difference.
5. **A** - $40/50 = 80\%$ and $30/50 = 60\%$.
6. **B** - Equal percents mean the variable does not change the rate much.
7. **C** - 18 out of 30 is 60%.
8. **B** - Joint frequencies are the counts inside the table.
9. **A** - Association shows a pattern, not a reason.
10. **A** - $21/60 = 0.35$.

Remember

- Joint frequencies are the counts inside the table; marginal frequencies are the totals.
- Relative frequency = $\text{count} \div \text{total}$, usually as a percent.
- Row percents compare groups defined by the rows.
- If row percents differ a lot, the variables are associated.
- Association does not prove that one variable causes the other.