

# Grade 8 · Two-Way Tables · Test

Common Core 8.SP.A.4 · mathovore.fr

Name: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Score: \_\_\_\_\_

This test has nine questions worth 20 points in total and should take about 45 minutes. Show every step. Calculators are not needed. Questions cover reading and building two-way tables, relative frequencies, and deciding whether two variables are associated.

## Test information

- **Grade:** Grade 8
- **Chapter:** Two-Way Tables
- **Common Core:** 8.SP.A.4
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 3 pts; Question 5: 3 pts; Question 6: 2 pts; Question 7: 2 pts; Question 8: 2 pts; Question 9: 2 pts)

## Question 1: Read the table (2 points)

One hundred students chose a snack. The table shows the results.

| Snack |       |       |       |
|-------|-------|-------|-------|
| Group | Fruit | Chips | Total |
| Boys  | 18    | 32    | 50    |
| Girls | 27    | 23    | 50    |
| Total | 45    | 55    | 100   |

Snack choice by group.

- How many girls chose fruit? (1 point)
- How many students chose chips? (1 point)

### Question 2: Complete the table (2 points)

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Eighty students were asked whether they have a sibling and how they get to school. Fill in the two missing cells.

| Trip to school |     |      |       |
|----------------|-----|------|-------|
| Sibling        | Bus | Walk | Total |
| Has sibling    | 21  | ?    | 40    |
| No sibling     | ?   | 26   | 40    |
| Total          | 35  | 45   | 80    |

A two-way table with two missing cells.

### Question 3: Build a table (2 points)

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A class has 30 students: 18 girls and 12 boys. Twelve of the girls and 7 of the boys joined the chess club. Make a two-way table of gender and chess club membership, with totals.

### Question 4: Relative frequencies (3 points)

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Use the snack table.

| Snack |       |       |       |
|-------|-------|-------|-------|
| Group | Fruit | Chips | Total |
| Boys  | 18    | 32    | 50    |
| Girls | 27    | 23    | 50    |
| Total | 45    | 55    | 100   |

Snack choice by group.

- What percent of the boys chose fruit? (1 point)
- What percent of the girls chose fruit? (1 point)
- Of the students who chose fruit, what percent are girls? (1 point)

### Question 5: Planner and homework (3 points)

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One hundred students were asked whether they use a planner and whether they turned in all homework last week.

**All homework in**

| Planner      | Yes | No | Total |
|--------------|-----|----|-------|
| Uses planner | 40  | 10 | 50    |
| No planner   | 20  | 30 | 50    |
| Total        | 60  | 40 | 100   |

Planner use and homework.

- a. Find the row relative frequencies, as percents. (2 points)
- b. Describe any association between using a planner and turning in homework. (1 point)

**Question 6: Association or not? (2 points)**

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Students chose a trip. Do these data suggest an association between grade and trip choice? Justify with relative frequencies.

**Trip**

| Grade   | Hiking | Camping | Total |
|---------|--------|---------|-------|
| Grade 7 | 15     | 35      | 50    |
| Grade 8 | 21     | 49      | 70    |
| Total   | 36     | 84      | 120   |

Trip choice by grade.

**Question 7: Counts or percents? (2 points)**

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At School A, 90 of 150 students ride the bus. At School B, 64 of 80 students ride the bus. Noah says the bus is more popular at School A because 90 is greater than 64. (a) Find the percent of riders at each school. (1 point) (b) Is Noah correct? Explain. (1 point)

**Question 8: Tally the responses (2 points)**

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Ten students named a favorite drink. The responses (gender-drink) are: Girl-Juice, Boy-Water, Boy-Water, Girl-Water, Girl-Juice, Boy-Juice, Girl-Juice, Boy-Water, Girl-Water, Boy-Water. Organize them in a two-way table with totals.

### Question 9: Choose the total (2 points)

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The table shows how students get to school.

| Grade   | Trip |     | Total |
|---------|------|-----|-------|
|         | Walk | Bus |       |
| Grade 7 | 28   | 42  | 70    |
| Grade 8 | 32   | 28  | 60    |
| Total   | 60   | 70  | 130   |

Trip to school by grade.

- What percent of seventh graders ride the bus? (1 point)
- Of the students who walk, what percent are eighth graders? Round to the nearest tenth. (1 point)