

Two-Way Frequency Tables

Algebra 1 • Section 10.6

Name: _____

Date: _____

Score: _____ / 12

Quick Review and Helpful Hints

Data questions are about choosing the right summary. Read the labels carefully, identify the total or condition being used, and connect each statistic to what it tells about the data.

▶ **Example:** Find the mean of 6, 8, 10, 12.

Work: Add the values to get 36, then divide by 4 values.

★ **Answer:** 9

◆ Practice Problems

Solve each problem. Show enough work that another student could follow your thinking.

- | | |
|--|--|
| <p>1. In a table, 18 of 50 students play soccer. Find the relative frequency. _____</p> | <p>6. If 8 of 20 athletes also play music, find conditional percent. _____</p> |
| <p>2. If 12 of 30 girls choose art, find the conditional frequency. _____</p> | <p>7. What does a marginal total show? _____</p> |
| <p>3. A table total is 80 and a cell is 20. Find the joint relative frequency. _____</p> | <p>8. What does a joint frequency show? _____</p> |
| <p>4. If 25 students prefer math and 15 prefer science, total? _____</p> | <p>9. If row total is 45 and cell count is 9, find row relative frequency. _____</p> |
| <p>5. Out of 60 students, 36 are in band. Find percent. _____</p> | <p>10. If column total is 32 and cell count is 24, find column relative frequency. _____</p> |

◆ Word Problems

11. A survey has 100 students. 40 like algebra, and 25 like both algebra and geometry. Find percent who like both. _____
12. In a club, 18 of 30 ninth graders prefer online practice. Find conditional percent. _____



Answer Keys

- | | |
|---------|---|
| 1. 0.36 | 7. Total for a row or column |
| 2. 0.40 | 8. Count in one cell for two categories |
| 3. 0.25 | 9. 0.20 |
| 4. 40 | 10. 0.75 |
| 5. 60% | 11. 25% |
| 6. 40% | 12. 60% |

Step-by-Step Explanations

- Relative frequency turns a count into a proportion — divide the 18 by the 50 total to get 0.36.
- 'Conditional' means you've narrowed to just the girls, so the denominator is 30: $12/30 = 0.40$.
- A joint frequency compares one cell to the grand total: $20/80 = 0.25$.
- These two groups don't overlap, so just combine the counts: $25 + 15 = 40$.
- Divide to get the proportion, then shift to percent: $36/60 = 0.60$, which is 60%.
- You're conditioning on athletes, so the base is 20: $8/20 = 0.40$, or 40%.
- Marginal totals sit in the margins of the table and sum up one whole category at a time.
- A joint frequency lives in a single cell — it's the count of people who fit both categories at once.
- Compare the cell to its own row: $9/45 = 0.20$.
- Here the column is the base, so divide the cell by it: $24/32 = 0.75$.
- With 100 students total, 25 liking both is conveniently already a percent: 25%.
- Focus only on the ninth graders as your base: $18/30 = 0.60$, which is 60%.



Want Even More Algebra 1 Practice?



Arizona Algebra I Preparation Bundle

18 full-length practice tests across three books
Fresh test practice, detailed explanations, and
organized review



18 Tests
3 Books
One Bundle

Important: These Algebra 1 resources are made for extra practice after the worksheet. Use the QR code for the state or program bundle connected with this worksheet.

Skill Review

- ✓ Strengthens equations, functions, systems, and modeling
- ✓ Supports steady review before tests
- ✓ Good for tutoring, homework, and independent practice

Build the foundation.

Test Practice

- ✓ Full-length practice tests for realistic pacing
- ✓ Detailed answer explanations for every test
- ✓ Useful after students finish topic worksheets

Practice with purpose.

Confidence

- ✓ Turns mistakes into targeted review
- ✓ Helps students see progress over time
- ✓ Keeps preparation organized and calm

Move forward prepared.