

Grade 8 · Two-Way Tables · Worksheet Answer Key

Common Core 8.SP.A.4 · mathovore.fr

This answer key shows every step for the 22 worksheet problems on two-way tables. Check which total each percent uses, and compare your table and conclusion with the worked solutions and completed tables.

Grade 8 Common Core: 8.SP.A.4

Problem 1: Read a cell

Find the row **Grade 8** and the column **Packed lunch**.

The cell shows **48** eighth graders.

Problem 2: Read the totals

(a) The column total for school lunch is $54 + 42 = 96$.

(b) The grand total is $96 + 84 = 180$.

Answers: **96 students** and **180 students**.

Problem 3: Percent of all students

The cell is 36 and the grand total is 180.

$$\frac{36}{180} = 0.2 = 20\%$$

The answer is **20%**.

Problem 4: Tally into a table

Count each combination: 7th-Walk 3, 7th-Bus 3, 8th-Walk 4, 8th-Bus 2. The row totals are 6 and 6, and the column totals are 7 and 5.

Check: $3 + 3 + 4 + 2 = 12$.

Trip to school

Grade	Walk	Bus	Total
Grade 7	3	3	6
Grade 8	4	2	6
Total	7	5	12

The completed table for the 12 students.

Problem 5: Complete the table

Row 1: $31 - 14 = 17$ eighth graders are in band.

Column 1: $50 - 14 = 36$ seventh graders are not in band.

Check with column 2: $17 + 33 = 50$.

Grade

Band	Grade 7	Grade 8	Total
In band	14	17	31
Not in band	36	33	69
Total	50	50	100

The completed table: 17 eighth graders in band and 36 seventh graders not in band.

Problem 6: Percent within a row

Divide by the Grade 7 row total, 90: $\frac{36}{90} = 0.4 = 40\%$.

The answer is **40%**.

Problem 7: Another row percent

Divide by the Grade 8 row total, 90: $\frac{42}{90} \approx 0.467$.

The answer is **46.7%**.

Problem 8: Percent within a column

Divide by the packed-lunch column total, 84: $\frac{48}{84} \approx 0.571$.

The answer is **57.1%**.

Problem 9: Row relative frequencies

Girls: $\frac{36}{60} = 60\%$ and $\frac{24}{60} = 40\%$.

Boys: $\frac{24}{60} = 40\%$ and $\frac{36}{60} = 60\%$.

Group	Reads daily	
	Yes	No
Girls	60%	40%
Boys	40%	60%

Row relative frequencies.

Problem 10: Is there an association?

Of girls, 60% read daily. Of boys, only 40% read daily. The percents are noticeably different.

Yes, there is a possible association: girls in this survey are more likely to read daily.

Problem 11: No association

Grade 7: $\frac{24}{40} = 60\%$ chose pizza.

Grade 8: $\frac{36}{60} = 60\%$ chose pizza.

The percents are equal, so there is **no association**. The counts differ only because the groups have different sizes.

Problem 12: Read the bar graph

Grade 7 packs a lunch 40% of the time. Grade 8 packs a lunch 53.3% of the time.

Eighth graders pack a lunch more often, and the 13-point difference suggests a possible association between grade and lunch type.

Problem 13: Build from percents

Non-sport players: $200 - 120 = 80$.

Sport and club: $0.45 \times 120 = 54$, so sport and no club: $120 - 54 = 66$.

No sport and club: $0.25 \times 80 = 20$, so no sport and no club: $80 - 20 = 60$.

Sport	Club		Total
	In club	Not in club	
Plays sport	54	66	120
No sport	20	60	80
Total	74	126	200

Club membership: column totals are 74 and 126.

Problem 14: Row or column total?

(a) The group is girls, so divide by the girls row total, 40: $\frac{13}{40} = 32.5\%$.

(b) The group is bowling fans, so divide by the bowling column total, 35: $\frac{13}{35} \approx 37.1\%$.

Answers: **32.5%** and **37.1%**.

Problem 15: Overall percent

The total who own a tablet is $45 + 27 = 72$.

$$\frac{72}{180} = 0.4 = 40\%.$$

The answer is **40%**.

Problem 16: Farmers market survey

Under 30: $\frac{27}{60} = 45\%$ buy organic.

30 and over: $\frac{54}{90} = 60\%$ buy organic.

The 15-point difference suggests a **possible association**: shoppers 30 and over are more likely to buy organic produce.

Problem 17: Movie snacks

Table totals: row totals 60 and 70, column totals 82 and 48, grand total 130.

Under 13: $\frac{33}{60} = 55\%$. Ages 13 and over: $\frac{49}{70} = 70\%$.

The percents differ by 15 points, so there is a **possible association**: older moviegoers are more likely to buy popcorn.

Popcorn			
Age	Yes	No	Total
Under 13	33	27	60
13 and over	49	21	70
Total	82	48	130

Popcorn purchases by age.

Problem 18: Sleep and test scores

8 or more hours: $\frac{21}{30} = 70\%$ earned an A, and 9 did not.

Less than 8 hours: $\frac{12}{30} = 40\%$ earned an A, and 18 did not.

Column totals: $21+12=33$ earned an A and $9+18=27$ did not.

There is a **possible association**: students who slept more were more likely to earn an A.

Earned an A			
Sleep	Yes	No	Total
8+ hours	21	9	30
Under 8	12	18	30
Total	33	27	60

Sleep and test results.

Problem 19: Pets in the class

Boys: $35-15=20$, so 8 boys have no pet. Girls: 9 have a pet, so 6 do not.

Girls: $\frac{9}{15} = 60\%$. Boys: $\frac{12}{20} = 60\%$.

The percents are equal, so there is **no association** between gender and owning a pet in this class.

Owns a pet

Group	Yes	No	Total
Girls	9	6	15
Boys	12	8	20
Total	21	14	35

Pet ownership by gender.

Problem 20: Little League practice

No hit: $50 - 30 = 20$ and $30 - 12 = 18$. Column totals: 42 and 38.

3 or more days: $\frac{30}{50} = 60\%$ got a hit. Fewer days: $\frac{12}{30} = 40\%$ got a hit.

The 20-point gap shows a **possible association**: players who practiced more got hits more often.

Got a hit

Practice	Hit	No hit	Total
3+ days	30	20	50
Under 3	12	18	30
Total	42	38	80

Practice and hits.

Problem 21: Table from column percents

Walkers: 35 are in 7th grade, so 65 are in 8th. Bus riders: $0.5 \times 60 = 30$ are in 7th grade, so 30 are in 8th.

Seventh graders total $35 + 30 = 65$.

$\frac{35}{65} \approx 0.538$, so about **53.8%** of seventh graders walk.

Grade	Trip		
	Walk	Bus	Total
Grade 7	35	30	65
Grade 8	65	30	95
Total	100	60	160

Walkers and bus riders by grade.

Problem 22: Check the claim

Girls who like math: $\frac{49}{100} = 49\%$.

Boys who like math: $\frac{31}{50} = 62\%$.

The claim is wrong. There are more girls in the survey, so there are more girls who like math. A larger share of boys (62%) than girls (49%) like math.

Group	Likes math		
	Yes	No	Total
Girls	49	51	100
Boys	31	19	50
Total	80	70	150

Math preference counts: girls 49 of 100, boys 31 of 50.