LESSON MAKER PRO

Category Count Quest

Use counts and conditional rates to analyze groups.

HIGH SCHOOL · MA.912.DP.3

MA.912.DP.3 "Solve problems involving categorical data."

NAME _____ DATE _____

READ THE GROUPS

Categorical data sorts people or objects into groups. For a conditional relative frequency, divide the count you want by the total in the stated group.

WORKED EXAMPLE

A survey includes only drama and band members; no student belongs to both groups. Of 18 drama members, 10 are ninth graders. Of 12 band members, 7 are ninth graders. What fraction of ninth graders are in drama?

1. Drama ninth graders: 10.
2. Band ninth graders: 7.
3. Total ninth graders: 10 + 7 = 17.
4. Fraction in drama: 10/17.

Answer: 10/17

PRACTICE 5 problems

1 A survey found 14 seniors and 11 juniors prefer streaming, while 9 seniors and 16 juniors prefer gaming. How many students prefer gaming?

ANSWER _____

2 Of 15 students who ride the bus, 6 bring lunch. What fraction of bus riders bring lunch?

ANSWER _____

3 Each member of this club plays exactly one of chess or cards. A club has 13 chess players and 5 card players. Four chess players and 2 card players are sophomores. What fraction of sophomores play cards?

ANSWER _____

4 At a lunch poll, 24 of 48 students choose tacos. What percent choose tacos?

ANSWER _____

5 At School A, 9 of 15 students prefer digital notes. At School B, 8 of 16 students prefer digital notes. Which school has the greater rate?

ANSWER _____

APPLY IT Show your work

1 Each respondent selects exactly one platform, console or PC. A student gaming survey found that 21 of 28 console players prefer cooperative games. Among PC players, 11 prefer cooperative games. What fraction of all students who prefer cooperative games play on console?

2 At an esports event, 13 of 26 streaming-game players brought headphones. Four of 16 puzzle-game players brought headphones. Which game group had the greater headphone rate, and by how many percentage points?

CHALLENGE One step up

Of 36 students who sleep at least 8 hours, 27 eat breakfast. Of 24 students who sleep less than 8 hours, 6 eat breakfast. Is eating breakfast associated with sleep group? Explain using conditional relative frequencies.

ANSWER KEY

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A survey found 14 seniors and 11 juniors prefer streaming, while 9 seniors and 16 juniors prefer gaming. How many students prefer gaming?	**25**
2	Of 15 students who ride the bus, 6 bring lunch. What fraction of bus riders bring lunch?	**2/5**
3	Each member of this club plays exactly one of chess or cards. A club has 13 chess players and 5 card players. Four chess players and 2 card players are sophomores. What fraction of sophomores play cards?	**1/3**
4	At a lunch poll, 24 of 48 students choose tacos. What percent choose tacos?	**50%**
5	At School A, 9 of 15 students prefer digital notes. At School B, 8 of 16 students prefer digital notes. Which school has the greater rate?	**School A**

PART 2 · APPLY IT

1. **21/32** There are 21 + 11 = 32 students who prefer cooperative games. The console group makes up 21/32 of that total.
2. **Streaming-game players, by 25 percentage points** The rates are 13/26 = 1/2 = 50% and 4/16 = 1/4 = 25%. The difference is 25 percentage points.

CHALLENGE

Yes. The breakfast rates are 27/36 = 3/4 and 6/24 = 1/4, so the rates are different.

Accept equivalent reduced fractions and correct percent forms. For comparison items, require a valid comparison of the conditional rates.