

AP Statistics - Variables and Categorical Data Displays - Worksheet

Common Core AP STAT 1.1, AP STAT 1.2, AP STAT 1.3, HSS-ID.A.1 · maths-pdf.fr/en/

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

These 20 problems build the skills in AP Statistics topics 1.1 to 1.3. You will classify variables, build frequency and relative frequency tables, read bar graphs and pie charts, and compare groups.

AP Statistics · Common Core State Standards: **AP STAT 1.1, AP STAT 1.2, AP STAT 1.3, HSS-ID.A.1**

Exercise 1 - Classify the variable

Classify each variable as categorical or quantitative.

- a. A student's favorite music genre
- b. The number of text messages sent yesterday
- c. The area code of a phone number
- d. Height in inches
- e. T-shirt size (S, M, L, XL)

Exercise 2 - Individuals and variables

A coach records data for three swimmers.

Swimmer	Grade	Best 50 m time (s)	Stroke
Maya	10	31.4	Butterfly
Jamal	11	29.8	Freestyle
Sofia	9	33.1	Backstroke

Identify the individuals, list the variables, and classify each variable.

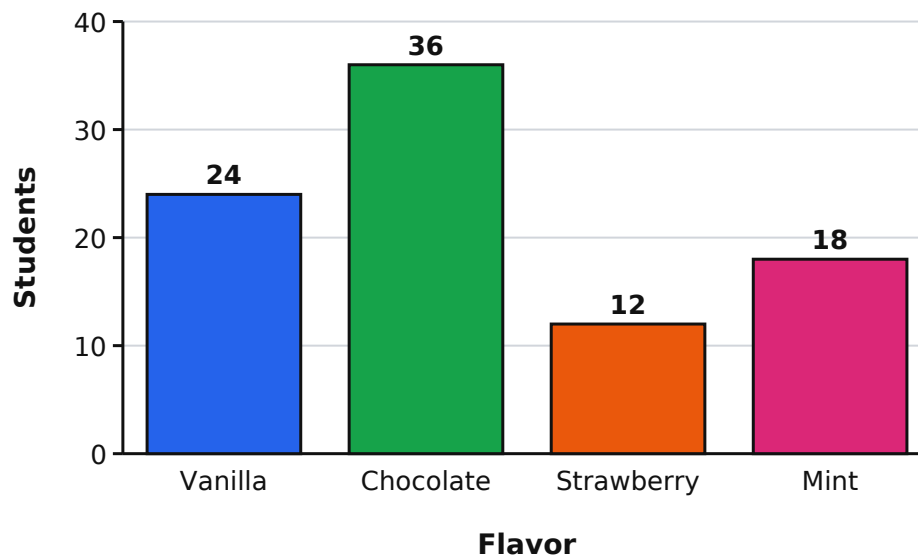
Exercise 3 - Relative frequency table

Two hundred students were asked how they get to school: bus 84, car 62, walk 34, bike 20. Make a relative frequency table and give each answer as a percent.

Exercise 4 - Find the missing count

A survey of 250 teens shows how they listen to music: streaming 46%, radio 22%, podcasts 18%, and other methods. Find the percent and the number of teens in the other category.

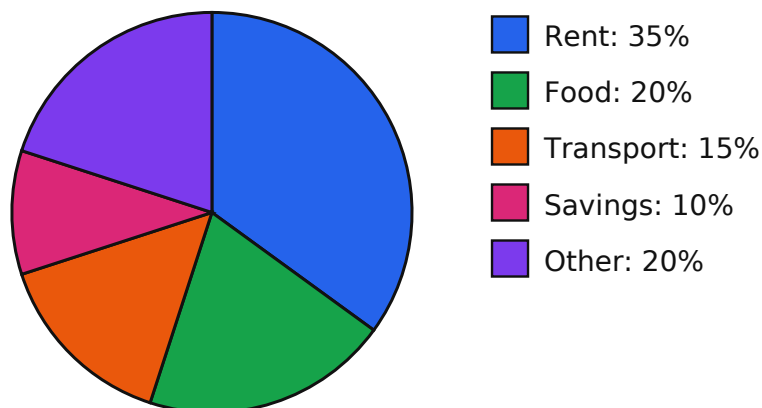
Exercise 5 - Read a bar graph



Favorite ice cream flavor.

(a) How many students were surveyed? (b) Which flavor is the mode? (c) What percent chose chocolate?

Exercise 6 - Pie chart angles



A monthly budget.

Find the central angle of each slice in degrees.

Exercise 7 - Is it a distribution?

A teacher gives relative frequencies 0.28, 0.35, 0.19, and 0.12 for four grades. Can these be the relative frequencies of one categorical variable? If not, what is missing?

Exercise 8 - Count raw data

Mei records the pet kept by 20 neighbors: dog, cat, dog, fish, cat, dog, dog, bird, cat, dog, fish, dog, cat, dog, cat, bird, dog, cat, dog, fish. Build a frequency table and a relative frequency table.

Exercise 9 - Misleading axis

A news graph shows pass rates for two driving schools: 92% for Oak Street and 96% for Main Street. The vertical axis starts at 90%. Compare how tall the bars look with how the rates really compare.

Exercise 10 - Percent to count

In a poll of students, 57 students chose soccer as their favorite sport, and this was 19% of the students. How many students were polled? How many did not choose soccer?

Exercise 11 - Numbers that are labels

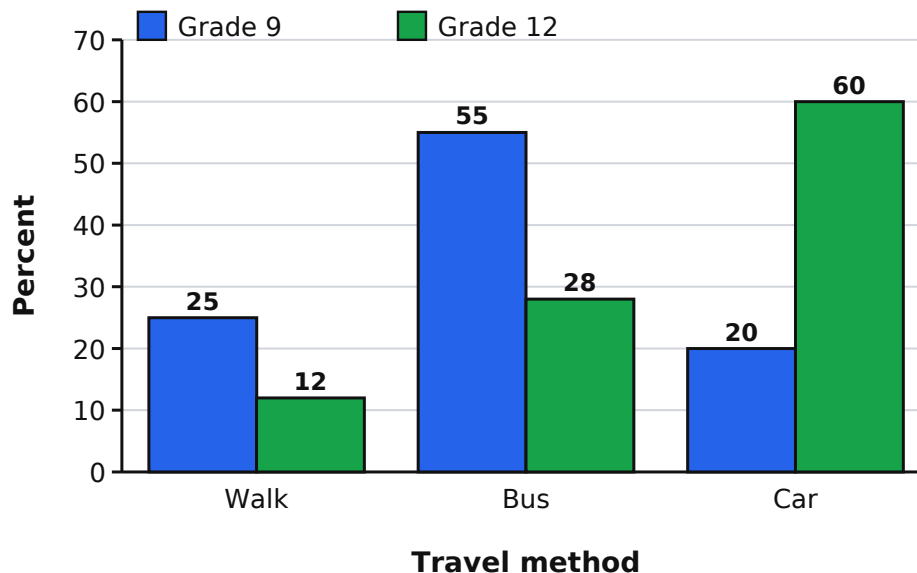
Diego says the mean jersey number on his team is 14.5, so the variable "jersey number" is quantitative. Is he correct?

Exercise 12 - Choose a display

Choose the best display (bar graph, pie chart, or neither) and explain.

- The percent of 400 students in each grade level, 9 through 12
- Favorite snacks when each student can choose up to three snacks
- The percent of voters in a city who prefer each of 5 candidates (every voter picks one)

Exercise 13 - Compare two groups



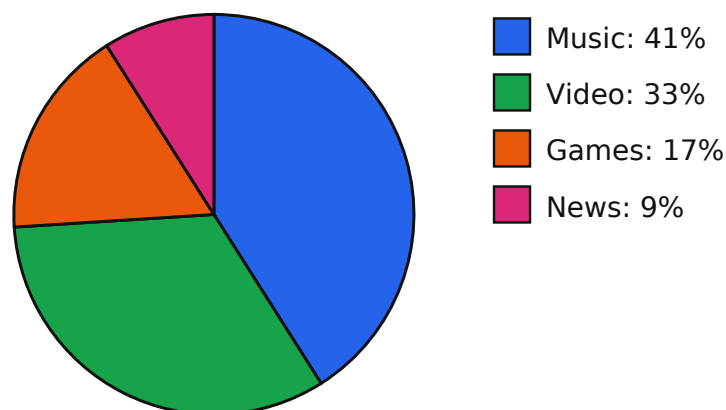
Percent of each group by travel method.

Of 80 ninth graders, 20 walk, 44 ride the bus, and 16 drive. Of 125 twelfth graders, 15 walk, 35 ride the bus, and 75 drive. Compute the relative frequencies and state which group is more likely to drive.

Exercise 14 - Counts or percents?

Explain why it is misleading to compare 16 ninth graders who drive with 75 twelfth graders who drive without using percents.

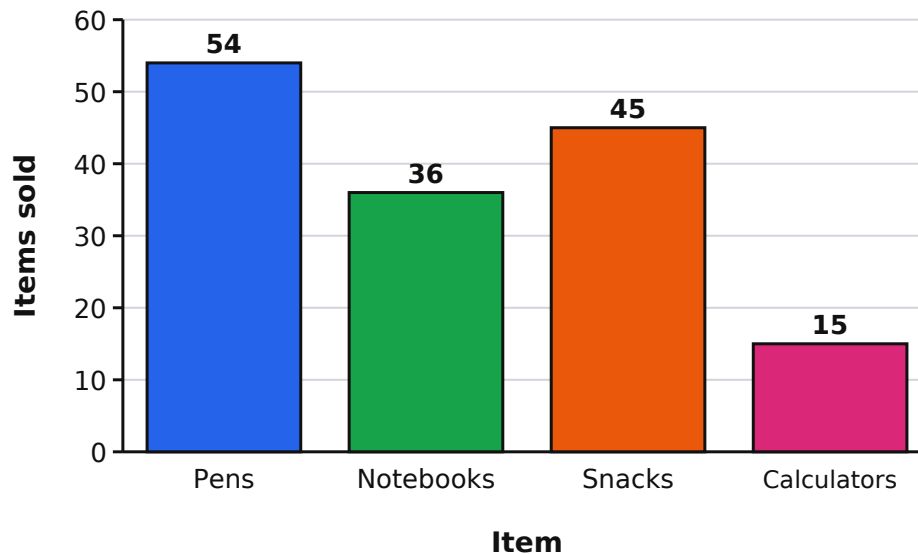
Exercise 15 - Pie chart to counts



Streaming time of 600 teens.

The pie chart shows the main use of streaming for 600 teens. Find the number of teens in each category and the percent who chose music or video.

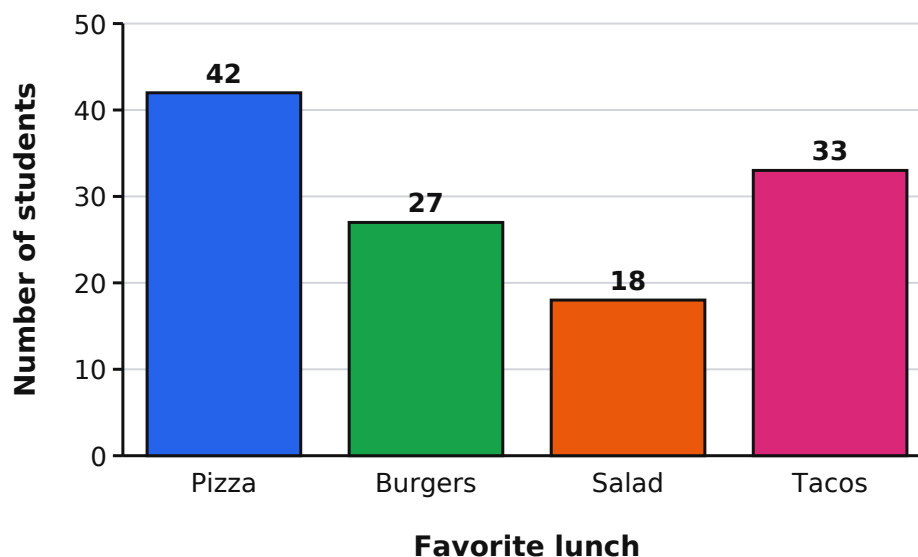
Exercise 16 - Survey summary



School store sales.

A school store sold 150 items last week: pens 54, notebooks 36, snacks 45, and the rest were calculators (see the graph). Find the number of calculators, the relative frequencies, and the percent of sales that were not snacks.

Exercise 17 - Write a description



Bar graph of the lunch survey. Each bar height is a count; the bars do not touch.

In the lunch survey of 120 students, pizza 42, burgers 27, salad 18, tacos 33. Write two sentences describing the distribution in context, using percents.

Exercise 18 - Combined categories

Of 480 phone owners surveyed, 38% use brand A, 29% brand B, 21% brand C, and the rest other brands. How many more owners use brand A than brand C? What percent use other brands?

Exercise 19 - Which survey is fairer?

Aisha says Ms. Lee's class (14 of 28 prefer fall) likes fall more than Mr. Cruz's class (18 of 40). Check her claim using relative frequencies.

Exercise 20 - Multi-step analysis

A county library has 2,400 card holders: 1,080 are children, 720 are teens, and the rest are adults. Next year the number of teens is expected to rise by 20% and the others stay the same. Find the new relative frequency of each group.