Analyzing Categorical Variables

- ## Topic: Individuals, Variables, and Categorical & Quantitative Data

- Objective: Students will be able to identify whom the individuals of a statistic are, and the quantity and types of variables within the data.

- Standards: AP Stats: VAR-1 (EU), VAR-1.B (LO), VAR-1.B.1 (EK), VAR-1.C (LO), VAR-1.C.1 (EK), VAR-1.C.2 (EK)

Individuals, Variables, and Categorical & Quantitative Data

- Individuals: Who or what is the subject of the data.

- Variables: may also be called a ***data item***. It is called a variable because the value may vary between data units in a population, and may change in value over time.

  > Categorical Data: may also me called qualitative variables. Represent types of data which may be divided into groups. Examples of categorical variables are race, sex, age group, and educational level.

  > Quantitative Data: are numerical. They represent a measurable quantity.

Individuals, Variables, and Categorical & Quantitative Data

Example 1: The girl's basketball team played a game this Wednesday. here are some of the statistics from the game.

ind. *Variable*

quant. *cat*

Player name	Free throw percentage	Assists	Class
Simone	100%	4	Junior
Maricel	75%	3	Junior
Derin	80%	7	Senior
Alli	90%	2	Senior
Asha	50%	0	Sophomore

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Example 2: Millions of Americans rely on caffeine to get them up in the morning. Here's nutritional data on some popular drinks at Ben's Beans coffee shop:

Ind. *Cat. Vari.* *Quant.*

Drink	Type	Calories	Sugars (g)	Caffeine (mg)
Brewed coffee	Hot	4	0	260
Caffè latte	Hot	100	14	75
Caffè mocha	Hot	170	27	95
Cappuccino	Hot	60	8	75
Iced brewed coffee	Cold	60	15	120
Chai latte	Hot	120	25	60

Read Picture Graphs (Multi-Step Problems)

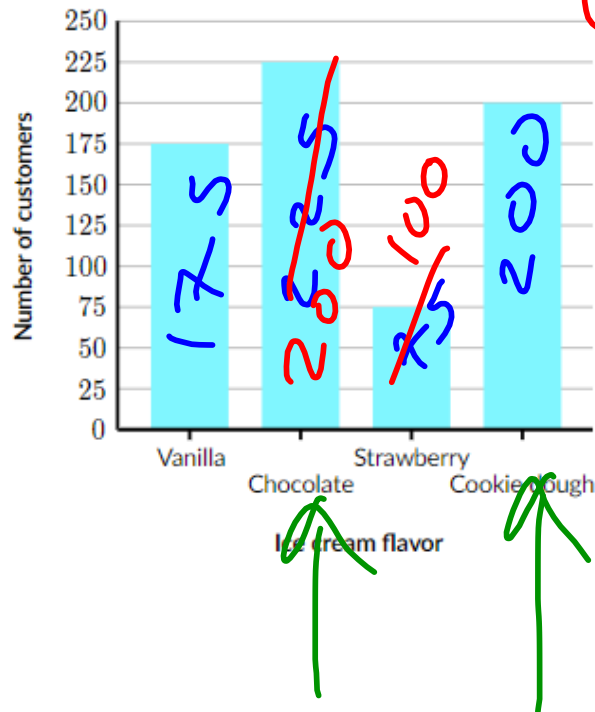Example: A group of friends made a graph of the number of shooting stars each person saw last month.

Who saw more shooting stars than Lucas saw, but fewer than Mike saw?

$= 6$ shooting stars

Person	Number of shooting stars
Lucas	★★★★
Anna	★★★★★★★★★★★★
Jackson	★★★★★
Mike	★★★★★★★
Simone	★★★★★★★★★

$5 \times 6 = 30$ SS

Read Bar Graphs (2-Step Problems)

Example: Dessert Zone asked its customers about their favorite ice cream flavor and graphed the results.

After Dessert Zone made the graph, 25 people changed their vote from chocolate to strawberry.

After those 25 people changed their vote, which 2 flavors were the favorite of the same number of customers?