Two-Way Tables

- ## Topic: Two-Way Tables

- Objective: Students will be able to identify, complete, and interpret two-way tables.

- Standards: AP Stats: UNC-1 (EU), UNC-1.P (LO), UNC-1.P.3 (EK)
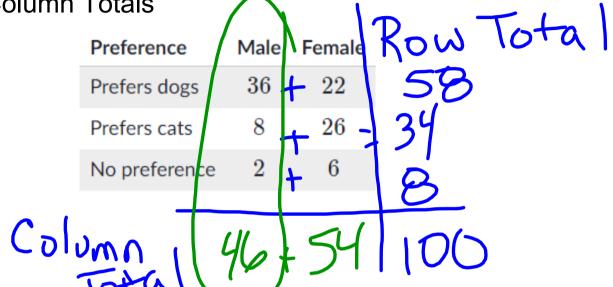
Two-Way Tables

- Example: Let's jump right in and look at a two-way frequency table that came from asking 100 students whether they prefer cats or dogs.

Preference	Male	Female
Prefers dogs	36	22
Prefers cats	8	26
No preference	2	6

- The columns of the table tell us whether the student is a male or a female. The rows of the table tell us whether the student prefers dogs, cats, or doesn't have a preference.
- Notice that there are two variables-- gender and preference-- this is where the two in two-way frequency table comes from.
- The cells tell us the number (or frequency) of students. For example, the 36 is in the male column and the prefers dogs row. This tells us that there are 36 male students who prefer dogs.
- How many female students prefer cats?

Two-Way Tables

- Row and Column Totals

Preference	Male	Female
Prefers dogs	36	22
Prefers cats	8	26
No preference	2	6

Handwritten annotations:

Row Total
58
34
8

Column Total   46 + 54 | 100

36 + 22
8 + 26 = 34
2 + 6

- To find the number of students that prefer cats, we just add up the number of students in the prefers cats row: 8 + 26 = 34

- How many of the students are male?   46

Two-Way Tables Challenge Problems

- Lena knows the following information about her box of 18 candies:
  > 10 candies contain both chocolate and caramel.
  > 3 candies contain neither chocolate nor caramel.
  > 12 candies in total contain chocolate.

- Help Lena organize the results in the following two-way frequency table.

	Contain caramel	Do not contain caramel	
Contain chocolate	10	+ 2	= 12
Do not contain chocolate	3	+ 3	= 6
	13 +	5	18 ✓