

Two Way Tables

Name \_\_\_\_\_

	Category A Coca-Cola	Category B Sprite	Total
Category 1 Garbage	34	8	42
Category 2 Table	16	14	30
Total	50	22	72

- In the above table highlight the cell yellow that represents Joint Frequency and pink that represent Marginal Frequency.
- You go to a dance and help clean up afterwards. To help, you collect the soda cans, Coca-Cola and Sprite, and organize them. Some cans were on the table and some were in the garbage. Seventy-two total cans were found. 42 total cans were found in the garbage and fifty total cans were Coca-Cola. 14 Sprite cans were found on the table. Complete the two-way frequency chart.
- If you were going to help throw another dance with the same people. What type of soda would you buy? Explain.

Coca-Cola because people had over twice the amount of sprite.

- Who was more likely to throw away their can, Sprite or Coke drinkers? Explain.

Coke  $\frac{34}{50} = 0.68$       Sprite  $\frac{8}{22} = 0.36$

Coke drinkers had a higher percentage put it in the trash.

- What percent of the party goers left their can on the table, given that they drank Sprite?

$$P(T|S) = \frac{8}{22} = \frac{4}{11}$$

- What percent of the party goers drank Coke, given that they threw away their can?

$$P(C|G) = \frac{34}{42} = \frac{17}{21}$$

- Now create a relative frequency table.

	Coca-Cola	Sprite	Total
Garbage	$\frac{34}{72} = 0.47$	$\frac{8}{72} = 0.11$	$\frac{42}{72} = 0.58$
Table	$\frac{16}{72} = 0.22$	$\frac{14}{72} = 0.20$	$\frac{30}{72} = 0.42$
Total	$\frac{50}{72} = 0.69$	$\frac{22}{72} = 0.31$	$\frac{72}{72} = 1$

- If there was really 360 people at the dance, using the above relative frequency table. How many preferred Sprite?

$$360 \cdot 0.31 = 111.6 \text{ cans of sprite}$$

- If there was really 360 people at the dance, how many Coke drinkers left their can on the table?

$$360 \cdot 0.22$$

## Two Way Tables

Name \_\_\_\_\_

Below is a table of people in the park and the activities that they do. Complete the relative frequency table below, based on the total participants. First, complete the table.

Activity	Jog	Fly Kites	Picnic	Total
Male	9	4	10	23
Female	11	1	15	27
Total	20	5	25	50

- In the above table highlight the cell yellow that represents Joint Frequency and pink that represent Marginal Frequency.
- Complete the above frequency table.
- What activity do females enjoy more? Explain.

Females enjoy Picnic most because that is the highest frequency

- If a friend of yours was going to go to the park what activity would the most likely do? Explain.

They would most likely picnic because that is the highest frequency event.

- What percent of park attendees picnicked, given they were male?

$$P(P|M) = \frac{10}{23} = 0.435 = 43.5\%$$

- What percent of park attendees were female, given that they jogged?

$$P(F|J) = \frac{11}{20} = 0.55 = 55\%$$

- Now create a relative frequency table.

	Jog	Fly Kites	Picnic	Total
Male	$\frac{9}{50} = 0.18$	$\frac{4}{50} = 0.08$	$\frac{10}{50} = 0.2$	$\frac{23}{50} = 0.46$
Female	$\frac{11}{50} = 0.22$	$\frac{1}{50} = 0.02$	$\frac{15}{50} = 0.3$	$\frac{27}{50} = 0.54$
Total	$\frac{20}{50} = 0.4$	$\frac{5}{50} = 0.1$	$\frac{25}{50} = 0.5$	$\frac{50}{50} = 1$

- If there was really 250 people at the park, using the above relative frequency table. How many preferred to fly kites?

$$250 \cdot 0.1 = 25 \text{ people flew kites.}$$

- If there was really 250 people at the park, how many were Male and Jogged?

$$0.18 \cdot 250 = 45 \text{ were male and jogged}$$

- If there was really 250 people at the park, how many were female or Picnicked?

$$0.54 + 0.4 - 0.22 = 0.72$$