

Practice Assignment

1. The table shows the results of a poll of randomly selected high school students who were asked if they prefer to hear all school announcements in the morning or afternoon.

	Underclassmen	Upperclassmen	
Morning	8	14	22
Afternoon	18	10	28
	26	14	40

a. What is the relative frequency of students are underclassmen?

$$26/40 = .65 \text{ or } 65\%$$

b. What is the relative frequency of ^{total} students who prefer to hear announcement in the morning?

$$22/40 = .55 \text{ or } 55\%$$

c. What is the relative frequency of underclassmen ^{condition} prefer to hear announcements in the afternoon?

$$18/26 = .69 \text{ or } 69\%$$

d. What is the relative frequency of student who prefer the morning ^{condition} are upperclassmen?

$$14/22 = .64 \text{ or } 64\%$$

2. Elizabeth surveys 9th graders, 10th graders, and 11th graders in her school. She asks each student how many hours they spend doing homework each night. She records the responses in the table below.

Grade	Hours spent on homework			
	0-2	2-4	More than 4	
9	38	12	2	52
10	21	25	9	55
11	14	18	20	52
	73	55	31	159

a. What percent of students ^{total} spend 2 - 4 hours on homework?

$$55/159 = .35 \text{ or } 35\%$$

b. What percent of 9th graders ^{condition} spend more than four hours on homework?

$$2/52 = .04 \text{ or } 4\%$$

c. What percent of seniors ^{condition} spend 0 - 2 hours on homework?

$$20/52 = .38 \text{ or } 38\%$$

d. What percent of those who study 2 - 4 hours ^{condition} are 10th graders?

$$25/55 = .45 \text{ or } 45\%$$

e. Create a conditional relative frequency chart to determine if there is an association between a student's grade level and the hours they spend on homework.

	0-2	2-4	4+	Total
9th	$38/52 = 73\%$	$12/52 = 23\%$	$2/52 = 4\%$	$52/52 = 100\%$
10th	$21/55 = 38\%$	$25/55 = 45\%$	$9/55 = 16\%$	$55/55 = 100\%$
11th	$14/52 = 27\%$	$18/52 = 35\%$	$20/52 = 38\%$	$52/52 = 100\%$
Total				

There appears to be an association between a student's grade level and the amount of homework hours one spends.

Freshmen - least hours
Juniors - most hours

The claims handlers at a car insurance company help customers with insurance issues when there is an accident, so their customer service skills are very important. The claim handlers are divided into three teams. For one month, a customer satisfaction survey was given for each team as shown below.

	Satisfied	Dissatisfied	
Team 1	20	8	28
Team 2	34	12	46
Team 3	34	10	44
	88	30	118

a. What percent of ^{condition} people on Team 1 had satisfied customers?

$$\frac{20}{28} = .71 \text{ or } 71\%$$

b. What percent of those ^{condition} who were dissatisfied dealt with someone from Team 3?

$$\frac{10}{30} = .33 \text{ or } 33\%$$

c. What percent of ^{total} people were satisfied?

$$\frac{88}{118} = .75 \text{ or } 75\%$$

d. What percent of ^{total} people dealt with Team 2?

$$\frac{46}{118} = .39 \text{ or } 39\%$$

e. Create a joint and marginal relative frequency table and a conditional relative frequency table.

Joint & Marginal Relative Frequencies

	Satisfied	Dissatisfied	Total
Team 1	$\frac{20}{118} = 17\%$	$\frac{8}{118} = 7\%$	$\frac{28}{118} = 24\%$
Team 2	$\frac{34}{118} = 29\%$	$\frac{12}{118} = 10\%$	$\frac{46}{118} = 39\%$
Team 3	$\frac{34}{118} = 29\%$	$\frac{10}{118} = 8\%$	$\frac{44}{118} = 37\%$
Total	$\frac{88}{118} = 75\%$	$\frac{30}{118} = 25\%$	$\frac{118}{118} = 100\%$

Conditional Relative Frequencies

	Satisfied	Dissatisfied	Total
Team 1	$\frac{20}{28} = 71\%$	$\frac{8}{28} = 29\%$	$\frac{28}{28} = 100\%$
Team 2	$\frac{34}{46} = 74\%$	$\frac{12}{46} = 26\%$	$\frac{46}{46} = 100\%$
Team 3	$\frac{34}{44} = 77\%$	$\frac{10}{44} = 23\%$	$\frac{44}{44} = 100\%$
Total			

f. Does there appear to be an association between the team a customer dealt with and customer satisfaction?

There does NOT appear to be an association between the team a customer dealt with and customer satisfaction. Team 1 appeared to have the lowest satisfaction at 71% and Team 3 had the highest at 77%.