

Chapter 1 FRAPPY!

Sample 1

Directions: Show all your work. Indicate clearly the methods you use, because you will be scored on the correctness of your methods as well as on the accuracy and completeness of your results and explanations.

Using data from the 2000 census, a random sample of 348 U.S. residents aged 18 and older was selected. Among the variables recorded were gender (male or female), housing status (rent or own), and marital status (married or not married).

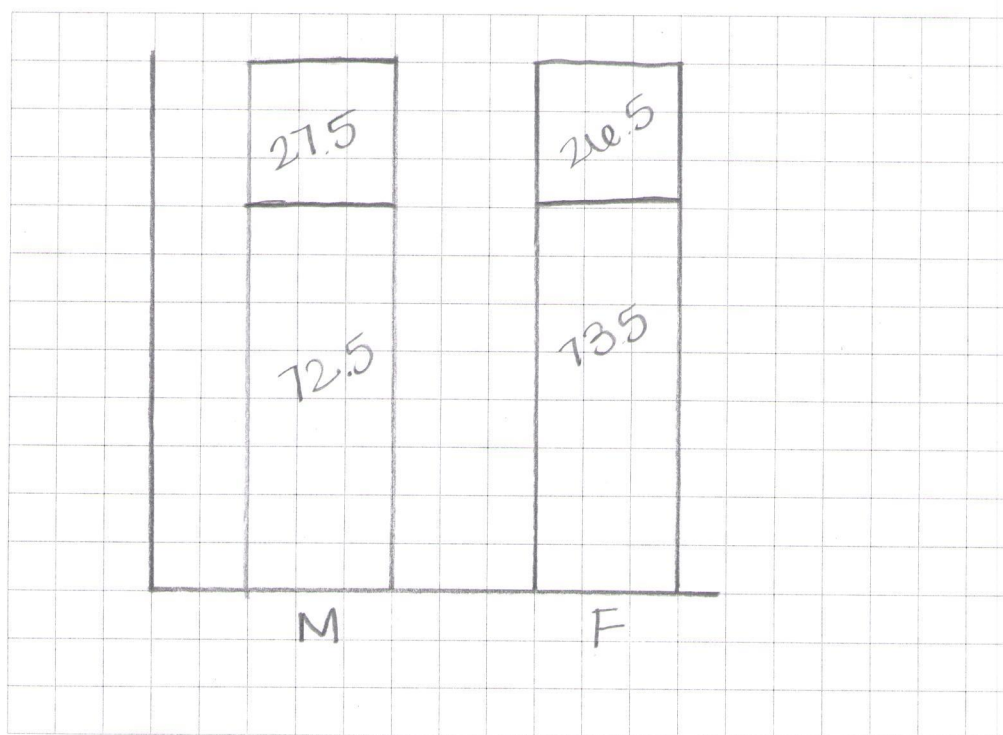
The two-way table below summarizes the relationship between gender and housing status.

	Male	Female	Total
Own	132	122	254
Rent	50	44	94
Total	182	166	348

(a) What percentage of the males in the sample own their home?

72.5% of males in the sample own their own homes.

(b) Make a graph to compare the distribution of housing status for males and females.



Sample 1

(c) Using your graph from part (b), describe the relationship between gender and housing status.

There seems to be no association between gender and housing status. Both are relatively the same so you cannot tell if being a male specifically means you are more likely to own a house or vice versa.

(d) The two-way table below summarizes the relationship between marital status and housing status.

	Married	Not Married	Total
Own	172	82	254
Rent	40	54	94
Total	212	136	348

For the members of the sample, is the relationship between marital status and housing status stronger or weaker than the relationship between gender and housing status that you described in part (c)? Justify your choice using the data provided in the two-way tables.

There is a stronger association between marital status and housing status than between gender and housing status. While the percentage of male and female homeowners was nearly identical, 81% of married individuals own their own home and only 60% of not married individuals own their home (a difference of nearly 20%). This tells us that married individuals are more likely to own their home than individuals that are not married are.

Sample 2

Chapter 1 FRAPPY!

Directions: Show all your work. Indicate clearly the methods you use, because you will be scored on the correctness of your methods as well as on the accuracy and completeness of your results and explanations.

Using data from the 2000 census, a random sample of 348 U.S. residents aged 18 and older was selected. Among the variables recorded were gender (male or female), housing status (rent or own), and marital status (married or not married).

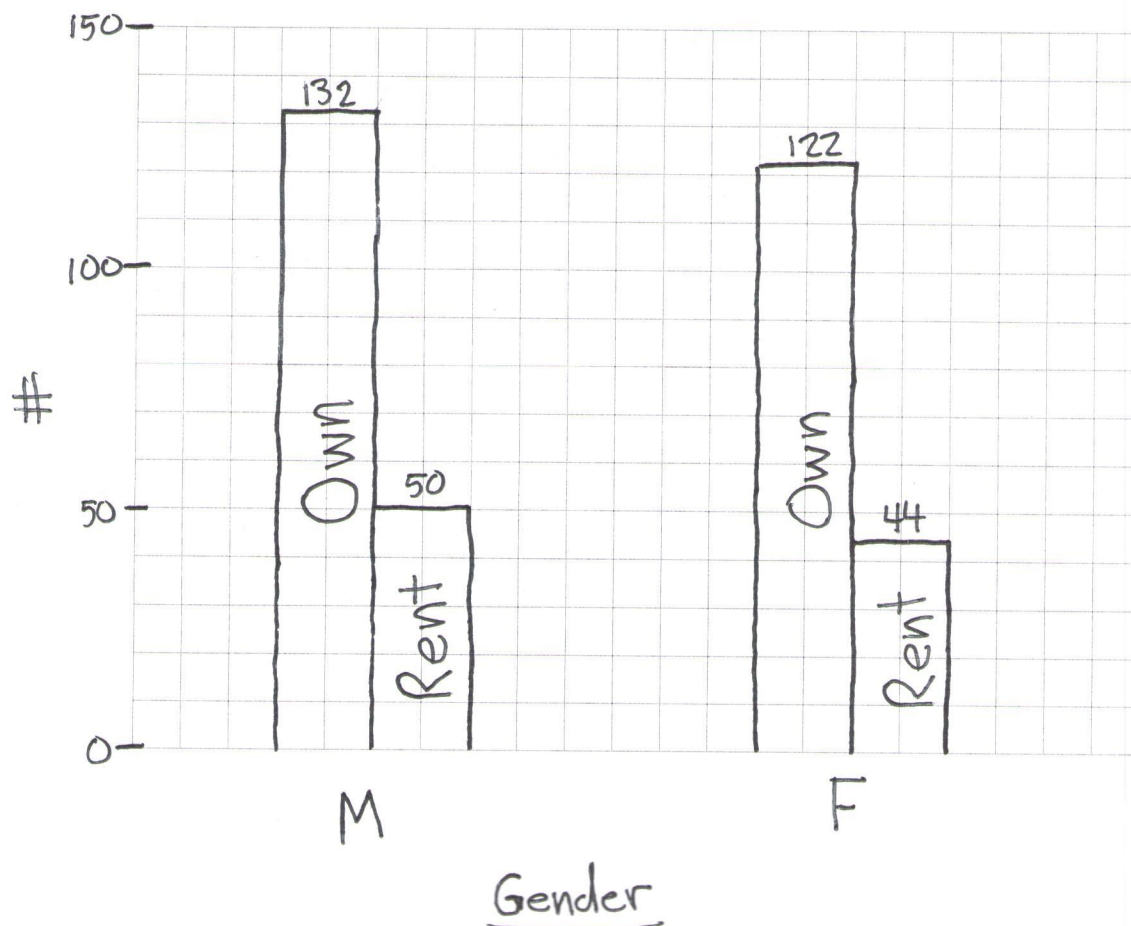
The two-way table below summarizes the relationship between gender and housing status.

	Male	Female	Total
Own	132	122	254
Rent	50	44	94
Total	182	166	348

(a) What percentage of the males in the sample own their home?

$$132/182 = 72.5\%$$

(b) Make a graph to compare the distribution of housing status for males and females.



(c) Using your graph from part (b), describe the relationship between gender and housing status.

There is no association between gender and housing status because both males and females are more likely to own than rent.

(d) The two-way table below summarizes the relationship between marital status and housing status.

	Married	Not Married	Total
Own	172	82	254
Rent	40	54	94
Total	212	136	348

For the members of the sample, is the relationship between marital status and housing status stronger or weaker than the relationship between gender and housing status that you described in part (c)? Justify your choice using the data provided in the two-way tables.

The association between marital status and housing status is stronger than the one between gender and housing status. Couples that are married are more likely to own a house than those who are not married.