

# Warm Up

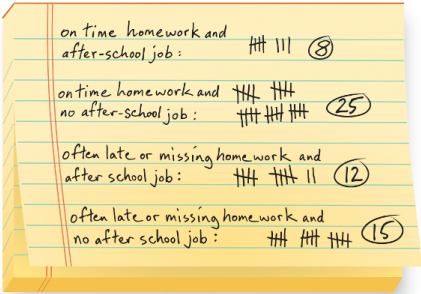
10/29

Check out the work F-block did with the question you all had yesterday in class.

What do you think? What do you notice?

**TRUE or FALSE**

Students with after-school jobs are less likely to have on-time homework than students without after-school jobs.



# Thoughts?

Table was "more organized"

- easy to read

\* - can compare \*

## Histograms

What info can we get?

# of people / group

# Recap of 5.3 A and B

## Problem 5.3

Use the information about the students to answer these questions.

- A Make a table to display the data on students and after-school jobs.
- B Use your table from Question A. Do you think each statement is *true* or *false*? Justify your answers.
- Students without after-school jobs are more likely to have late or missing homework than students with after-school jobs.
  - Students with after-school jobs are more likely to have late or missing homework than on-time homework.
  - Students without after-school jobs are three times as likely as students with after-school jobs to have on-time homework.
  - Students with after-school jobs are less likely to have on-time homework than students without after-school jobs.

1. w/job, late work

$$\frac{12}{20} = 0.6$$

no job, late work

$$\frac{15}{40} = 0.375$$

True  $0.6 > 0.375$

likelihood of job+late      likelihood no job+late

	Jobs	No Job
on time	8	25
Late	12	15
Totals	20	40

#2 What are we comparing?

only talking about students w/jobs

on time?      late?

$$\begin{array}{l} \text{\# on time} \rightarrow \frac{8}{20} = 0.4 \\ \text{total w/jobs} \rightarrow \end{array} \quad \frac{12}{20} = 0.6$$

	Jobs	No Job
on time	8	25
Late	12	15
Totals	20	40

#3 Student w/out jobs i have on-time HW

$$\frac{25}{40} = 0.625$$

Students w/jobs i on-time HW

$$\frac{8}{20} = 0.4$$

	Jobs	No Job
on time	8	25
Late	12	15
Totals	20	40

FALSE  
Not 3x as likely!

### Problem 5.3

Use the information about the students to answer these questions.

- A** Make a table to display the data on students and after-school jobs.
- B** Use your table from Question A. Do you think each statement is *true* or *false*? Justify your answers.
  1. Students without after-school jobs are more likely to have late or missing homework than students with after-school jobs.
  2. Students with after-school jobs are more likely to have late or missing homework than on-time homework.
  3. Students without after-school jobs are three times as likely as students with after-school jobs to have on-time homework.
  4. Students with after-school jobs are less likely to have on-time homework than students without after-school jobs.
- C**
  1. The numbers of students with and without after-school jobs are not the same. Rewrite the data in your table as fractions and percents.
  2. Do the fractions and percents in your table change your answers to Question B? Explain your reasoning.
- D** If someone claims that the data and analysis show that after-school jobs cause students to have late or unfinished homework, what alternate explanations would you offer? What do you think could be the cause of late or unfinished homework other than after-school jobs?

# 5.2 Politics of Girls and Boys

## Analyzing Data in Two-Way Tables

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Every four years social studies teachers at the middle school hold a mock election. Each student registers as a Democrat, Independent, or Republican, all of which are categorical data values. Then the classes hold primary and final elections for President.

The table shows the student registrations in one class.

	Democrat	Independent	Republican
Boys	8	4	12
Girls	8	2	6



- Do you think boys and girls have different party preferences?
- What evidence could you give as support?

## Problem 5.2

There are different ways to answer the question about political preferences of girls and boys in the sampled class.

**A** Use the table on the previous page. Do you think each statement is *true* or *false*? Justify your answers.

- Girls and boys are equally likely to be Democrats.
- Boys are more likely than girls to be Independents.
- Boys are more likely than girls to be Republicans.
- Girls are only half as likely as boys to be Republicans.

**B** Study the table of party choices and claims about differences between boys and girls. Notice that there are 24 boys and 16 girls in the class.

- Copy and complete this extended table.

	Democrat	Independent	Republican	Totals
Boys	8	4	12	■
Girls	8	2	6	■
Totals	■	■	■	■

- Do the totals of political party choices change your answers to Question A? Explain your reasoning.

**C** One way to compare groups with unequal numbers of members is to compute percents.

- Copy and complete the table below to show the fractions or percents of boys and girls with each preference.

	Democrat	Independent	Republican
Boys	$\frac{8}{24} = \frac{1}{3} = 33\frac{1}{3}\%$	■	■
Girls	■	■	■

- Do the percent calculations change your answers to Question A? Explain your reasoning.

# Homework

Finish classwork