

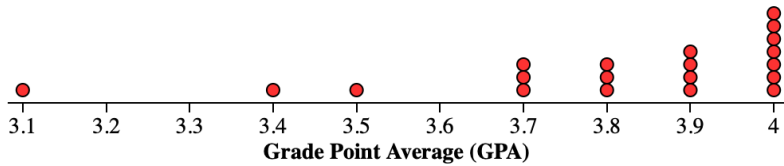
AP Calculus

Which AP Class Has a Higher GPA?

AP Statistics

A university admissions officer wonders if grade point average (GPA) differs between AP Calculus and AP Statistics students. To find out, she selects a random sample of 20 AP Calculus and 10 AP Statistics students.

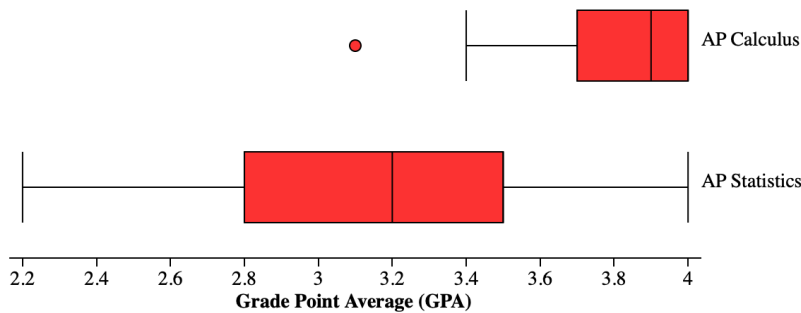
Here are the results for the 20 AP Calculus students.



n	mean	SD	min	Q ₁	med	Q ₃	max
20	3.805	0.239	3.1	3.7	3.9	4	4

- Describe the shape of the distribution.
- Is the mean or median a better measure of the center of the distribution? Explain.
- What is the most appropriate measure of variability? Explain.
- Are there any outliers? Show work?

Here is a side-by-side boxplot of the results from both samples.



Group Name	n	mean	SD	min	Q ₁	med	Q ₃	max
1: AP Calculus	20	3.805	0.239	3.1	3.7	3.9	4	4
2: AP Statistics	10	3.16	0.558	2.2	2.8	3.2	3.5	4

- Compare the distributions.
- Do the data provide convincing evidence that AP Calculus students have a higher GPA than AP Statistics students, on average? Explain.

Name: _____ Hour: _____ Date: _____

One of the other questions that the university admissions officer asked the AP Calculus and AP Statistics students was their college plans for after high school. The table summarizes the responses.

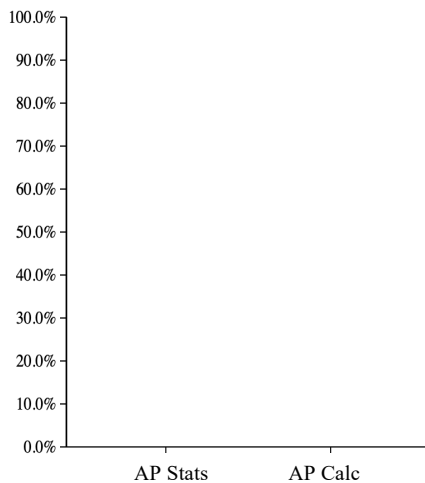
		COLLEGE PLANS			Total
		None	Community College	University	
COURSE	AP Statistics	2	3	5	10
	AP Calculus	1	4	15	20
	Total	3	7	20	30

1. Calculate the percent of AP Statistics students for each category of COLLEGE PLANS.

2. Calculate the percent of AP Calculus students for each category of COLLEGE PLANS.

3. Make a segmented bar graph to display the distribution of COLLEGE PLANS.

4. Is there an association between COURSE and COLLEGE PLANS *for this sample*? Explain.



5. What information is missing from the segmented bar graph? Convert it into a mosaic plot.

6. Do the data provide convincing evidence of an association between COURSE and COLLEGE PLANS for *all AP Stats and AP Calc students*?

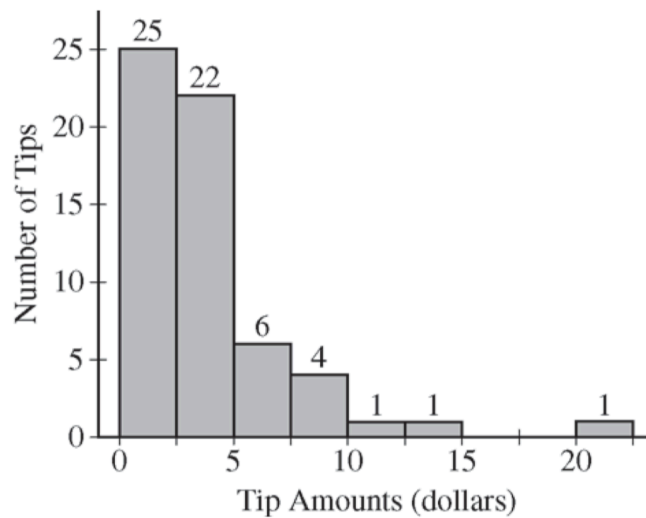
Name: _____ Hour: _____ Date: _____

One-Variable Analysis

Important ideas:

Check Your Understanding (2016 #1)

Robin works as a server in a small restaurant, where she can earn a tip (extra money) from each customer she serves. The histogram below shows the distribution of her 60 tip amounts for one day of work.



(a) Write a few sentences to describe the distribution of tip amounts for the day shown.