

## Test 2

<i><b>Variable</b></i>	<i><b>School</b></i>	<i><b>Graduation Rate</b></i>	<i><b>% of Classes Under 20</b></i>	<i><b>Student/Faculty Ratio</b></i>	<i><b>Alumni Giving Rate</b></i>
Description	The name of the University	Percentage of enrollees who graduate	Percentage of Classes offered with $\leq 20$ students.	Number of students enrolled divided by total number of faculty	Percentage of living alumni who gave to the University in 2000
Mean		83.042	55.729	11.542	29.271
Median		83.5	59.5	10.5	29
Mode		92	65	13	13
Standard Deviation		8.607	13.194	4.851	13.441
Skewness		-0.282	-0.501	0.582	0.370
Minimum		66	29	3	7
Maximum		97	77	23	67
Count		48	48	48	48

1. Test the hypothesis that graduation rate and alumni giving rate are (linearly) independent. We expect universities with higher graduation rates to have higher mean giving rates.
2. If the graduation rate of school A is 5 percentage points higher than that of school B, how much higher do we expect school A's giving rate to be?
3. If you learn that A and B above have identical student to faculty ratios, what is your revised answer to question 2? Be certain to explain why it went up (if it went up) or why it went down (if it went down) or why it stayed the same. Direct your response to a university administrator.
4. Provide a point forecast of alumni giving rate for a university with graduation rate of 80, 65 percent of its classes with 20 or fewer students, and a student/faculty ratio of 20.
5. Of the 48 universities in the data set, which one has the most surprisingly low alumni giving rate?
6. Bo notices that some of the 48 have "university" in their names, some have "college" and the rest have "institute". Bo wonders whether these names are predictive of student/faculty ratio? (Formulate and test a relevant hypothesis.)