1. A statistics teacher wants to know if exam scores have changed over the last several semesters. This semester the scores average 71.2 with a standard deviation of 15.8 points for 25 students. Is this semester different from the normal average of 77.6 points using the p<.05 significance level?
   1. Write out the 5 hypothesis testing steps.
   2. What is the effect size?
   3. What is the power of this study (note: use your notes for the table)?
2. A researcher examines student satisfaction (1 to 5 scale with higher numbers being more satisfied) with the previous recreational facilities and the new facilities with a fancy pool. Here are their responses:

|  |  |
| --- | --- |
| Old Recreational Facilities | New Recreational Facilities |
| 2 | 4 |
| 1 | 2 |
| 5 | 5 |
| 3 | 5 |
| 3 | 4 |
| 2 | 3 |
| 5 | 4 |

* 1. Are students more satisfied with the new facilities using the p<.01 significance level? List the 5 hypothesis testing steps.
  2. What is the effect size?
  3. How many people did you need to find a significant effect given the effect size and type of test (one versus two tailed) that you used (note: use your notes for the table)?

1. The Student Government Association is trying to determine if the plus/minus system is effective. They claim that student scores have decreased due to the use of this system (because there is no A+ designation). Given the following randomly selected student scores (2.45, 3.55, 2.67, 2.89, 3.05, 3.99, 1.75, 2.24, 3.01, 2.15) are these scores lower than the school average of 2.57? Use p<.05 significance level.
   1. List the 5 hypothesis testing steps.
   2. What is the effect size?