

Research and Statistics for Educators
Benchmark 4: *t*tests

Name _____

Answer the following questions for each example. Submit both your Word document and your Excel file in Angel.

{10 points each}

Example One

Researchers investigated the effect of an individualized approach to reading instruction versus whole class instruction using a reading textbook series. One group was taught reading using books chosen by each individual. The other group all used the same selections from a basal reader. The researchers hypothesized that the individualized approach would result in greater achievement.

Individualized	Basal
4	0
3	1
6	2
5	3
7	4
9	5
6	3
5	1
1	1
3	2
8	4
7	6

1. Will this be an independent or dependent samples t test?
2. What is the null hypothesis?
3. What is the alternative hypothesis?
4. Will this be a one or a two-tailed test?
5. Mean/s (round to two decimal places):
Individualized _____ Basal _____
6. Standard Deviation/s (round to two decimal places):
Individualized _____ Basal _____
7. P value (round to six decimal places): _____
8. Accept or reject the null hypothesis at $p < 0.05$?

Example Two

Ten subjects were given an intelligence test. After the experiment in which the subjects received treatment, the subjects were given the same intelligence test to ascertain if they would receive higher scores due to the treatment.

Subject	Pretest	Posttest
1	7	9
2	6	7
3	8	10
4	7	9
5	8	8
6	5	6
7	6	7
8	5	11
9	9	7
10	8	10

1. Will this be an independent or dependent samples t test?
2. What is the null hypothesis?
3. What is the alternative hypothesis?
4. Will this be a one or a two tailed test?
5. Mean/s (round to two decimal places):
Pretest_____ Posttest _____
6. Standard Deviation/s (round to two decimal places):
Pretest_____ Posttest _____
7. P value (round to six decimal places) _____
8. Accept or reject the null hypothesis at $p < 0.01$?