Time Frame: 50 minutes

Subject Matter:  *t* - Test

Objective: TSWBAT test means for small samples, using the *t* test.

Standards: DA – 4.10

 Materials: PowerPoint Presentation, Calculator, and Worksheets

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Presentation of Information

The students will be asked to solve the following problems in pair. They are given 25 minutes to solve the problems. After the given time, the class will go over the problems.

1. A state executive claims that the average number of acres in western Pennsylvania state park is less than 2000 acres. A random sample of 5 parks is selected, and the number of acres is shown. At $α=0.01$, is there enough evidence to support the claim?

959 1187 493 6249 541

1. The average salary of graduates entering the actuarial field is reported to be $40,000. To test this, a statistics professor surveys 20 graduates and finds their average salary to be $43,228 with a standard deviation of $4,000. At $α=0.05$, has he shown the reported salary incorrect?
2. A survey of 15 U.S. large cities finds that the average commute time one way is 25.4 minutes. A chamber of commerce executive feels that the commute in his city is less and wants to publicize this. He randomly selects 25 commuters and finds the average is 22.1 minutes with a standard deviation of 5.3 minutes. Using $α=0.10$, is he correct?
3. A random sample of stipends of teaching assistants’ in economics is listed below. Is there sufficient evidence at the $α=0.05$ level to conclude that the average stipend differs from $15,000? The stipends listed (in dollars) are for the academic year.

14,000 18,000 12,000 14,356 13,185 13,419 14,000 11,981

17,604 12,283 16,338 15,000

42785Review Problems in *z* Test and *t* Test

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: March 16, 2011

1. As store manager hypothesizes that the average number of pages a person copies on the store’s copy machine is less than 40. A sample of 36 customers’ orders is selected. At $α=0.01$, is there enough evidence to support the claim?

2 2 2 5 32 5 29 8 2 49 21 1 24

72 70 21 85 61 8 42 3 15 27 113 36 37

5 3 58 82 9 2 1 6 9 80 9 51 2

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