Student’s t-test is applicable only when:

(a) n≤30 and σ is known

(b) n>30 and σ is unknown (c) n=30 and σ is known (d) All of the above

**Problem 1**

A one-sample *t*‐test is conducted on H0: μ = 81.6. The sample has equation *s* = 3.1, and *n* = 25. The test statistic is

A. 0.806

B. 1.803

C. 4.032

D.

**Problem 2**

To test the mean hours of work in a population of employees Ho: μ = 40 vs Ha: μ 40, a random sample of 20 employees was taken. Sample statistics are equation and *s* = 3.4. The critical value of this test at a significance level of 0.05 is

A.

B.

C.

D.

**Problem 3**

For testing a normal population mean, in which of the following situation a t-test *must be* used?

1. when the sample size is small (n<30) and population variance is known.
2. when the sample size is small (n<30) and population variance is unknown.
3. when the sample size is small (n>30) and population variance is known.
4. When population variance is known regardless of sample size.

**Answer B.**

**Problem 4**

A study was set up to look at whether there was a difference in the mean arterial blood pressure between two groups of volunteers, after 6 weeks of following one of two treatment programs. One group of volunteers was given an exercise regimen to follow for the 6 weeks and the other group was given the same exercise regimen with the addition of an experimental tablet.

Which type of t-test should be used in this situation?

a) One sample t-test

b) independent samples t-test

c) Paired samples t-test

d) None of the t-tests would be suitable

**Answer: B**

**Problem 5**

To see if there had been a significant change in reported alcohol consumption(units) in patients diagnosed with alcoholic liver disease before intervention and after the intervention has been completed. Which of the following t-tests should be used and for what reason?

a) One sample t-test because the “Before” data is normally distributed

b) independent samples t-test because the “Before” data is normally distributed

c) A paired samples t-test because the “Before” is normally distributed.

d) A paired samples t-test because the “Difference” is normally distributed.

**Answer: C**

**Problem 6**

The test-statistic has a t-distribution with the following degrees of freedom.

a) n

b) n - 1

c) n - 2

d) n1 + n2 - 2

**Answer B.**

**Problem 7**

Which of the following is not needed to calculate a *t*-score for a test?

1. Sample mean
2. Sample standard deviation
3. Sample size
4. Significance level

**Answer: D**

**Problem 8.**

A matched pairs t-test compares means of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ participants on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 a. different; a single measure  
 b. the same; two different measures  
 c. different; two different measures  
 d. the same; a single measure

**Problem 9**