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## Unit 9 - Week 8

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### Course outline

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Lesson-37 Hypothesis Testing using Minitab

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## Assignment 8

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-03-27, 23:59 IST.**

1) A sample of 87 professional working women showed that the average amount paid annually into a private pension fund per person was \$3352. The population standard deviation is \$1100. A sample of 76 professional working men showed that the average amount paid annually into a private pension fund per person was \$5727, with a population standard deviation of \$1700. A woman activist group wants to prove that women do not pay as much per year as men into private pension funds. Using 0.001 significance level and these sample data, is it true that women on an average pay less than men into private pension funds annually. **1 point**

- a) Yes
- b) No
- c) Data insufficient
- d) Can't say

No, the answer is incorrect.

Score: 0

Accepted Answers:

a) Yes

2) Two independent samples of observations were collected. For the first sample of 60 elements, the mean was 86 and the standard deviation 6. The second sample of 75 elements had a mean of 82 and a standard deviation of 9. Compute the estimated standard error of the difference between the two means. **1 point**

- a) 2.256
- b) 3.248
- c) 1.296
- d) 4.125

No, the answer is incorrect.

Score: 0

Accepted Answers:

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- c) Data insufficient
- d) Can't say

**No, the answer is incorrect.****Score: 0****Accepted Answers:**

a) Yes

4) The t-test for the difference between the means of two independent populations assumes the respective **1 point**

- a) Sample sizes are equal
- b) Sample variances are equal
- c) Populations are approximately normal
- d) All of the above

**No, the answer is incorrect.****Score: 0****Accepted Answers:**

c) Populations are approximately normal

5) In testing the differences between the means of two independent populations, the null hypothesis is: **1 point**

- a)  $H_0: \mu_1 - \mu_2 = 2$
- b)  $H_0: \mu_1 - \mu_2 = 0$
- c)  $H_0: \mu_1 - \mu_2 > 0$
- d)  $H_0: \mu_1 - \mu_2 < 2$

**No, the answer is incorrect.****Score: 0****Accepted Answers:**b)  $H_0: \mu_1 - \mu_2 = 0$ 

6) Null and alternative hypotheses are statements about: **1 point**

- a) population parameters
- b) sample parameters
- c) sample statistics
- d) it depends - sometimes population parameters and sometimes sample statistics

**No, the answer is incorrect.****Score: 0****Accepted Answers:**

a) population parameters

7) A result is called "statistically significant" whenever **1 point**

- a) The null hypothesis is true
- b) The alternative hypothesis is true
- c) The p-value is less or equal to the significance level
- d) The p-value is larger than the significance level

**No, the answer is incorrect.****Score: 0****Accepted Answers:**

c) The p-value is less or equal to the significance level

8) The average time in years to get an undergraduate degree in computer science was compared for men and women. Random samples of 100 male computer science majors and 100 female computer science majors were taken. Choose the appropriate parameter(s) for this situation. **1 point**

- a) One population proportion  $p$
- b) Difference between two population proportions  $p_1 - p_2$
- c) One population mean  $\mu_1$
- d) Difference between two population means  $\mu_1 - \mu_2$

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*d) Difference between two population means  $\mu_1 - \mu_2$*

9) A hypothesis test is done in which the alternative hypothesis is that more than 10% of a population is left-handed. The p-value for the test is calculated to be 0.25. Which statement is correct? **1 point**

- a) We can conclude that more than 10% of the population is left-handed
- b) We can conclude that more than 25% of the population is left-handed
- c) We can conclude that exactly 25% of the population is left-handed
- d) We cannot conclude that more than 10% of the population is left-handed

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*d) We cannot conclude that more than 10% of the population is left-handed*

10) Decision value to reject null hypothesis in case of a right tail test is said to be **1 point**

- a) Calculated  $t$  must be greater than critical value
- b) Calculated  $t$  is less than negative of critical  $t$ -value
- c) Calculated  $t$  must be less than critical value
- d) Calculated  $t$  must be less than critical value in absolute form

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*a) Calculated  $t$  must be greater than critical value*

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