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Homework 4

1

A sample of 100 young women of Chinese descent in a US college had average BMI 21.5 kg/m^2 and standard deviation 1.9 kg/m^2 . Suppose you wish to test the hypothesis that the mean BMI in this population is equal to the value of 21.1 kg/m^2 (consistent with the population of young women in China) against the alternative that the mean BMI is inconsistent with that in a population with mean 21.1 kg/m^2 . The t-statistic you obtain from these data is _____.

*Answer Point Value: 3.0 points**Answer Key: 2.1/2.12*

2

A sample of 100 young women of Chinese descent in a US college had average BMI 21.5 kg/m^2 and standard deviation 1.9 kg/m^2 . Suppose you wish to test the hypothesis that the mean BMI in this population is equal to the value of 21.1 kg/m^2 (consistent with the population of young women in China) against the alternative that the mean BMI is inconsistent with that in a population with mean 21.1 kg/m^2 . The hypothesis test you use will involve a t distribution with _____ degrees of freedom.

*Answer Point Value: 3.0 points**Answer Key: 99*

3

A sample of 100 young women of Chinese descent in a US college had average BMI 21.5 kg/m^2 and standard deviation 1.9 kg/m^2 . Suppose you wish to test the hypothesis that the mean BMI in this population is equal to the value of 21.1 kg/m^2 (consistent with the population of young women in China) against the alternative that the mean BMI is inconsistent with that in a population with mean 21.1 kg/m^2 . Carrying out this test, you obtain the p-value $p = ______$.

*Answer Point Value: 3.0 points**Answer Key: 0.03/0.04*

4

Researchers evaluated two versions of a cash transfer program in Zomba, Malawi, which gave money to young girls attending schools and measured their academic performance. One version of the program gave the girls money unconditionally, while the other version gave the girls money only when they had good attendance records. When testing the hypothesis that academic performance of the girls was unrelated to the version of the cash transfer program received against the alternative that there was a difference in academic performance, researchers obtained $p = 0.04$. Which interpretations below are incorrect?

☐ A. There is a 96% chance the study results will be confirmed if the study is repeated.

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