HW9

2020年4月15日 星期三　　下午6:14

Homework 9_...

Homework 9

Due Apr 16 at 11:59pm　**Points** 15　**Questions** 4
Available Apr 10 at 12am - Apr 16 at 11:59pm 7 days　**Time Limit** None
Allowed Attempts 2

Take the Quiz Again

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	16 minutes	15 out of 15

① Correct answers are hidden.

Score for this attempt: 15 out of 15
Submitted Apr 15 at 6:12pm
This attempt took 16 minutes.

Question 1

3.5 / 3.5 pts

It is known that driving can be difficult in regions where winter conditions involve snow-covered roads. For cars equipped with all-season tires traveling at 90 kilometers per hour, the mean stopping time in fresh snow is known to be 215 meters, with a standard deviation of σ = 2.5 meters. It is often advocated that automobiles in such areas should be equipped with special tires to compensate for such conditions, especially with respect to stopping distance. A manufacturer of tires made for driving in fresh snow claims that vehicles equipped with their tires have a decreased stopping distance. A study was done

using a random sample of nine snow tires from the manufacturer on a snow-covered test track. The tests resulted in a mean stopping distance of $\bar{x}$ = 212.9 meters. Using the sample results and assuming that stopping distance is a Normally distributed random variable, what is the value of the test statistic?

- 0.05
- **–2.52**
- –9.36
- –1.04
- –1.96

Question 2

3.5 / 3.5 pts

Suppose we wish to test the hypotheses H_0: μ = 10 versus H_1: μ < 10, where μ represents the mean age of children not in high school who are members of a large gymnastics club in a metropolitan area. Assume age follows a Normal distribution with σ = 2. A random sample of 16 ages is drawn from the population, and we find the sample mean of these observations to be $\bar{x}$ = 8.76. What is the value of the test statistic?

- z = –1.24
- **z = –2.48**
- z = –9.92

- z = –0.62

Question 3

4 / 4 pts

Suppose we wish to test the hypotheses H_0: μ = 10 versus H_a: μ < 10, where μ represents the mean age of children not in high school who are members of a large gymnastics club in a metropolitan area. Assume age follows a Normal distribution with σ = 2. A random sample of 16 ages is drawn from the population, and we find the sample mean of these observations to be $\bar{x}$ = 8.76. What is the *P*-value?

- 0.1075
- 0
- **0.0066**
- 0.2676

Question 4

4 / 4 pts

Suppose we wish to test the hypotheses H_0: μ = 10 versus H_1: μ < 10, where μ represents the mean age of children not in high school who are members of a large gymnastics club in a metropolitan area. Assume age follows a Normal distribution with σ = 2. A random sample of 16 ages is drawn from the population, and we find the sample mean of these observations to be $\bar{x}$ = 8.76. Test at 5% significance level (α

=0.05). What is your conclusion?

- Fail to Reject the null hypothesis.
- **Reject the null hypothesis**

Quiz Score: 15 out of 15