

## Hypothesis Testing about a Mean $\mu$

College students sleep for a mean less than 5 hours the night before a final exam as claimed by Professor Snodgrass. A sample of 250 college students reveal a mean of 4.2 hours with a standard deviation of 0.8 hours. Using the 1% level of significance to test the hypothesis, answer the following questions.

1. What is the claim?
2. What kind of test is this? Two tail test, right tail test, or left tail test?
3. What are your critical value(s)?
4. What is your test statistic?
5. What is your conclusion?

College students sleep for a mean more than 4 hours the night before a final exam as claimed by Professor Snodgrass. A sample of 120 college students reveal a mean of 4.8 hours with a standard deviation of 1.2 hours. Using the 5% level of significance to test the hypothesis, answer the following questions.

6. What is the claim?
7. What kind of test is this? Two tail test, right tail test, or left tail test?
8. What are your critical value(s)?
9. What is your test statistic?
10. What is your conclusion?

College students sleep for a mean equal to 6 hours the night before a final exam as claimed by Professor Snodgrass. A sample of 120 college students reveal a mean of 5.2 hours with a standard deviation of 1.8 hours. Using the 10% level of significance to test the hypothesis, answer the following questions.

11. What is the claim?
12. What kind of test is this? Two tail test, right tail test, or left tail test?
13. What are your critical value(s)?
14. What is your test statistic?
15. What is your conclusion?

College students sleep for a mean not equal to 6 hours the night before a final exam as claimed by Professor Snodgrass. A sample of 20 college students reveal a mean of 6.2 hours with a standard deviation of 1.6 hours. Using the 5% level of significance to test the hypothesis, answer the following questions.

16. What is the claim?
17. What kind of test is this? Two tail test, right tail test, or left tail test?
18. What are your critical value(s)?
19. What is your test statistic?
20. What is your conclusion?

The following data represents the amount of time (hours) students sleep during summer vacation. **Approximate your answer to the nearest tenths.**

**8,7,8,10,6,7,9,8,12,7,7,8**

Compute the:

21. Sample mean.
22. Sample variance.
23. Sample standard deviation.

Students sleep for at least 9 hours a day while on summer vacation, as claimed by Professor Snodgrass. Use the 1% level of significance to perform the following hypothesis test.

24. What is the claim?
25. What kind of test is this? Two tail test, right tail test, or left tail test?
26. What are your critical value(s)?
27. What is your test statistic?
28. What is your conclusion?

The following data represents the amount of time (hours) students sleep during summer vacation. **Approximate your answer to the nearest tenths.**

**9,7,8,10,7,7,9,8,12,10**

Compute the:

- 29. Sample mean.
- 30. Sample variance.
- 31. Sample standard deviation.

Students sleep for no more than 7 hours a day while on summer vacation, as claimed by Professor Snodgrass. Use the 5% level of significance to perform the following hypothesis test.

- 32. What is the claim?
- 33. What kind of test is this? Two tail test, right tail test, or left tail test?
- 34. What are your critical value(s)?
- 35. What is your test statistic?
- 36. What is your conclusion?

### Answer Sheet

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