

Quiz 6 for Statistics 301
Elementary Statistical Methods - Fall 1999
Material Covered: Sections 9.2,9.3 of Workbook; Chapter 9.4,9.5,9.6,9.7
of text
For: 19th November

Name (please print): _____
last first

Octane ratings from a supplier's pipeline were sampled on 12 consecutive days. Assume the octane ratings follow a normal distribution.

88.6, 86.6, 89.6, 87.6, 88.3, 88.8,
88.9, 87.4, 87.9, 88.0, 88.2, 88.5,

1. [1] Give the p-value that demonstrates whether or not the data supports the claim the average octane rating is greater than 87.5. _____.
2. [2] In a second independent sample of 15 octane ratings, we find $\bar{x}_2 = 88.5$, $s_2 = 0.43$. We are interested in testing whether or not the average difference in octane ratings is the same or different at a level of significance of 5%. In particular, the p-value is (do *not* pool) _____.
3. [2] In a third independent sample of 17 octane ratings, we find $\bar{x}_2 = 87.5$, $s_2 = 0.53$. The pooled standard deviation is _____.
4. [1] We are interested in testing whether or not the percentage of octane ratings between 88.0 and 88.9 (including 88.0 and 88.9) is less than 60%. The p-value is _____.

1. [1] 0.005

2. [2] 0.249

3. [2] 0.64; $\sqrt{\frac{(12-1).78^2+(17-1).53^2}{12+17-2}}$

4. [1] 0.45