

NAME _____

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MATH 156.6 — QUIZ VII

Sulfur compounds can cause “off-odors” in wine, so wine makers want to know the odor threshold, the lowest concentration of a compound that the human nose can detect. Here are the odor thresholds for one such compound, dimethyl sulfide (DMS), from 10 student wine-tasters (units are micrograms per liter, $\mu\text{g}/\text{l}$):

31 31 43 36 23 34 32 30 20 24

- (a) Assume that it is known that the standard deviation of odor thresholds of untrained noses is $\sigma = 7\mu\text{g}/\text{l}$. Give a 95% confidence interval for the mean DMS odor threshold of student wine tasters.
- (b) Explain what it means that you are “95%” confident in that interval.

Extra credit: What conditions do you need to know about this data for you to trust the reliability of the confidence interval you just calculated? How would you go about checking these conditions in this situation?