

**DID I GET THIS:** State the Hypotheses for a test for a population mean

For the following scenarios:

- Give the null and alternative hypotheses and
- State in words what  $\mu$  represents in your hypotheses (define your **parameter**  $\mu$ )

**Question 1:** The National Assessment of Educational Progress (NAEP) is administered annually to 4th, 8th, and 12th graders in the United States. On the math assessment, a score above 275 is considered an indication that a student has the skills to balance a checkbook. In a random sample of 500 young men between the ages of 18 and 20, the mean NAEP math score is 272. Do we have evidence to support the claim that young men nationwide have a mean score below 275?

CHECK ANSWER

**Question 2:** The National Center for Health Statistics reports that the systolic blood pressure for males 35 to 44 years of age has a mean of 128. In a study of business executives, a random sample of 100 executives has a mean systolic blood pressure of 134. Do the data suggest that the mean systolic blood pressure for business executives is higher than 128?

CHECK ANSWER

**Question 3:** An analytical chemistry lab is conducting quality control tests on a drug. A single dosage of the drug should contain 8 mg of active ingredient. Of course, there will be a small amount of variability due to imperfections in the production process, but the mean of all dosages produced should be 8 mg. In 20 random samples, the mean amount of active ingredient is 7.7 mg. Do the data suggest that the mean amount of active ingredient in all dosages produced is different from 8 mg?

CHECK ANSWER