AP Stats
Chap 22 Handout   Name _____ Pd _____

Show all necessary work and place your answers on the spaces provided.

College Credit Hours.
A professor at a large university believes that students take an average of 15 credit hours per term. A random sample of 24 students in her class of 250 students reported the following number of credit hours that they were taking:

| 12 | 13 | 14 | 14 | 15 | 15 | 15 | 16 | 16 | 16 | 16 | 16 |
| 17 | 17 | 17 | 18 | 18 | 18 | 18 | 19 | 19 | 19 | 20 | 21 |

Does this sample indicate that students are taking more credit hours than the professor believes?

1. Test an appropriate hypothesis and state your conclusion.

2. If we wish to conduct a new survey, how many students must we ask to be 96% sure of estimating the mean number of credit hours to within 2 hours?

Fuel Economy.
Penn State University has a large fleet of cars. Seeing a rise in their gas costs for the cars, they believe the fleet is not reaching their goal of 26 miles per gallon. To see if the goal is being met, managers check the gasoline usage for 50 trips from the cars chosen at random. They found a mean of 25.02 mpg and a standard deviation of 4.83 mpg. Is this evidence that they have failed to attain their fuel economy goal?

3. Using notation, list **ONLY** the hypothesis.

4. State **ONLY** your conclusion, in context.

5. If we wish to conduct a new survey, how many trips should we choose to be 97% sure to estimate the number of miles per gallon to within three?