

## Confidence Intervals for Means

You take a SRS of students and ask them how many hours of sleep they got last night. You find a sample mean of 6.6 hrs and sample SD of 0.825 hrs. Below, you will calculate a 95% confidence interval for the average hours slept by students.



- a) If you assume your sample size is 10, calculate the estimated standard error for your sample distribution.
  
  
  
  
  
  
  
  
  
  
- b) Find your critical value ( $t_{df}^*$ ). You'll need to use the t-distr calculator (there is a link on the class GDoc).
  
  
  
  
  
  
  
  
  
  
- c) Calculate your confidence interval.
  
  
  
  
  
  
  
  
  
  
- d) Describe your confidence interval in context.
  
  
  
  
  
  
  
  
  
  
- e) What do you mean by “95% confident”?
  
  
  
  
  
  
  
  
  
  
- f) Now repeat parts a-d, but this time assume the sample size is 30.
  
  
  
  
  
  
  
  
  
  
- g) How did the confidence interval change when the sample size increased? What are two reasons for this?