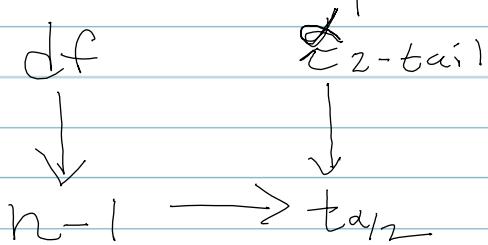


Confidence Intervals for a Population Mean (μ) (σ is unknown).

1. Gather \bar{x} , $s = \frac{\text{sample std. dev.}}{\sqrt{n}}$, n , level of conf.
 Verify $n > 30$ or pop. is normal.
2. $\alpha = 1 - (\text{level of confidence})$

3. Look up $t_{\alpha/2}$ on Table A2.



4. $E = t_{\alpha/2} \cdot \frac{s}{\sqrt{n}}$ \leftarrow max. error

5. Conf. interval : $\bar{x} - E < \mu < \bar{x} + E$.

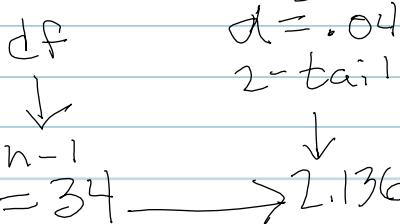
The mean hours of sleep for 35 (random) Mt. SAC students was 3.4 hours a night, with a std. dev of 1.6 hours.

Construct a 96% Confidence Interval for the mean hours of sleep of all Mt SAC students.

1. $\bar{x} = 3.4$, $s = 1.6$, $n = 35 > 30 \checkmark$, Conf = 0.96

2. $\alpha = 1 - \text{conf} = 1 - 0.96 = 0.04$

3. Table A2



4. $E = t_{\alpha/2} \cdot \frac{s}{\sqrt{n}} = 2.136 \cdot \frac{1.6}{\sqrt{35}} \approx 0.58$

5. $\bar{x} - E < \mu < \bar{x} + E$

$3.4 - 0.58 < \mu < 3.4 + 0.58$
 $2.82 < \mu < 3.98$.