

Given a 90% Confidence interval as related to an  $\alpha = 0.1$  for 2 tailed test:

$$\bar{X} \pm t_{\alpha/2} \left( \frac{s}{\sqrt{n}} \right) \quad \alpha = 0.05$$

$$\bar{X} = 10020$$

$$s = 63.57184$$

$$n = 30$$

$$t_{\alpha/2} = t_{0.025} \text{ for } df=29 \approx 1.699$$

$$\text{Lower limit} = 10020 - 1.699 \times \left( \frac{63.57184}{\sqrt{30}} \right) = 9998.2$$

$$\text{Upper limit} = 10020 + 1.699 \times \left( \frac{63.57184}{\sqrt{30}} \right) = 10041.8$$