

Sample Size

- * To determine the minimum sample
size n needed to estimate the
population mean μ with a
confidence level c and a
margin of error E :

$$n = \left(\frac{Z_{c/2}}{E} \right)^2$$

EX:

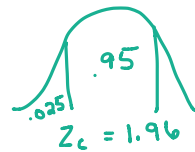
- * An economics researcher wants to estimate the mean number of hours worked by all grocery store employees in a county. How many employees must be included in the sample to be 95% confident that the sample mean is within 1.5 hours of the population mean? Assume the standard deviation is 7.9 hours.

$$n = ?$$

$$E = 1.5$$

$$C = 0.95 \rightarrow$$

$$\sigma = 7.9$$



$$n = \left(\frac{1.96(7.9)}{1.5} \right)^2$$

$$n \approx 107 \text{ employees}$$

- * Round up to nearest whole #
- * Would need 107 or more