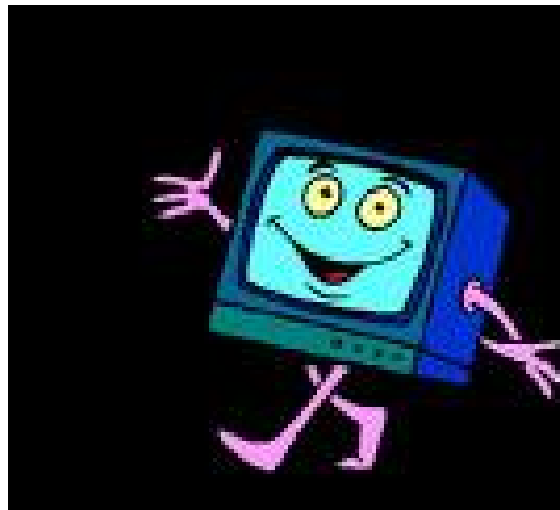


# Large Sample Confidence Interval for Population Mean

The College Students Television Example



# The Problem

- ▶ Suppose a sample of 225 college students watch an average of 28 hours of television per week, with a standard deviation of 10 hours.
  - What can we conclude about *all* college students' television time?



# Solution:

Assuming a normal distribution for television hours, we can be 95%\* sure that

$$\mu = \bar{x} \pm 1.96 \frac{\sigma}{\sqrt{n}}$$

$$\mu = 28 \pm 1.96 \frac{10}{\sqrt{225}}$$

$$\mu = 28 \pm 1.96(.67)$$

$$\mu = 28 \pm 1.31$$

\*In the standard normal distribution, exactly 95% of the area under the curve is in the interval

-1.96 ... +1.96