

Unit 8 Review #1

- ① population = all gas stations in large city
parameter = average gas price in large city
sample = 10 gas stations
statistic = \$3.45, average gas price of 10 stations

- ② a.) yes, $10(7) = 70 < 100$
population (100 tiles) is more than 10
times the sample (7 tiles)

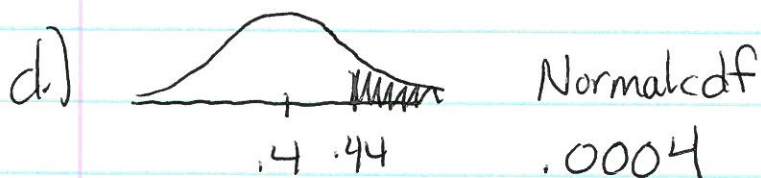
b.) No $np \geq 10$ $n(1-p) \geq 10$
 $7(.42) \not\geq 10$ $7(1-.42) \not\geq 10$

3a.) $\mu_{\hat{p}} = .4$

b.) $\sigma_{\hat{p}} = \sqrt{\frac{.4(1-.4)}{1785}} = .012$

yes, $10(1748) < \text{all U.S. Adults}$

c.) $np \geq 10$ $n(1-p) \geq 10$ yes
 $1785(.4) \geq 10$ $1785(1-.4) \geq 10$



4a.) No, population is not normal and sample size is too small ($10 < 30$)

b.) yes, population is normal

c.) yes, population is not normal but sample size is large enough. $50 > 30$ so central limit theorem says distribution is approximately normal.

5a.) $\mu_{\bar{x}} = .5$

b.) $\sigma_{\bar{x}} = \frac{.02}{\sqrt{36}} = .003$ $10(36) = 360 < \text{all bots made per day}$

c.) yes, $36 > 30$ so central limit thm says normal approximation is O.K.

