Name: ______________________ Hour: _____ Date: ______

Chapter 7 Review

A number that describes the whole population is known as a parameter.

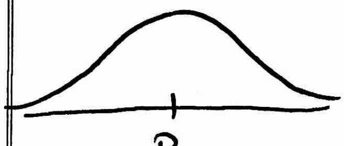
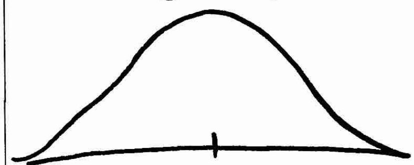
A number that is calculated from a sample is known as a statistic.

We always use a statistic to estimate a parameter.

In Section 7-2, we used a sample proportion to estimate a population proportion.

In Section 7-3, we used a sample mean to estimate a population mean.

Summary:

	Sample Proportions	Sample Means
What is the parameter?	p	μ
What is the statistic?	$\hat{p}$	$\bar{x}$
Draw Sampling Distribution.	Sampling Dist. of $\hat{p}$ 	Sampling Dist. of $\bar{x}$ 
When is the sampling distribution approximately normal?	Large counts $np \geq 10$ $n(1-p) \geq 10$	• If the population distribution is approx normal OR • If the sample is large, CLT ($n \geq 30$)
What is the mean of the sampling distribution?	$\mu_{\hat{p}} = p$	$\mu_{\bar{x}} = \mu$
What is the standard deviation of the sampling distribution?	$\sigma_{\hat{p}} = \sqrt{\frac{p(1-p)}{n}}$	$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}}$
What condition must be satisfied in order to use the above formula?	10% condition $n \leq \frac{1}{10}N$	10% condition $n \leq \frac{1}{10}N$
What is the formula for a z-score?	$z = \frac{\hat{p} - p}{\sqrt{\frac{p(1-p)}{n}}}$	$z = \frac{\bar{x} - \mu}{\sigma/\sqrt{n}}$

Old stuff from Chapter 6: Binomial Distributions

BINS: $\mu = n \times p$

$\sigma = \sqrt{n \cdot p(1-p)}$

$P(X=k) = {}_nC_k \, p^k (1-p)^{n-k}$