

Go to www.lhs.kennyiams.com/5Dpage4.pdf and complete these notes.

<p>As long as the observations are _____, even if we sample from a skewed or bimodal population the _____ tells us that the means (or proportions) of repeated random samples will tend to follow _____ as _____</p>	<p>independent</p> <p>Central Limit Theorem</p> <p>a Normal model</p> <p>the sample size grows.</p>
<p>Central Limit Theorem (CLT) [the fundamental theorem of statistics]</p>	<p>The sampling distribution model of the sample mean (and proportion) is approximately Normal for large n, regardless of the distribution of the population, as long as the observations are independent.</p>
<p>Assumptions / Conditions for using a Normal model as the SDM for a mean:</p>	<p>Assumptions:</p> <ol style="list-style-type: none"> 1. Independent - sampled values must be independent of each other. Conditions: <ol style="list-style-type: none"> a) Randomization – SRS or at least representative and not biased. b) 10% Condition – If sampling w/o replacement Then $n \leq 10\%$ of the population. 2. Sample Size - n, must be large enough. (More on this later) Conditions: <ol style="list-style-type: none"> a) For now, Think about your sample size in the context of what you know about the population, and then Tell whether the Large Enough Sample Condition has been met.
<p>Unlike proportions, if we know the true population mean, μ, we don't automatically know the</p>	<p>standard deviation of the population, σ.</p>
<p>For means the sampling distribution is centered at _____ and its standard deviation declines with the _____. So the Normal Model representing the SDM for a proportion is _____</p>	<p>μ, the true population mean</p> <p>square root of the sample size $\sigma(\bar{x}) = SD(\bar{x}) = \frac{\sigma}{\sqrt{n}}$</p> $N\left(\mu, \frac{\sigma}{\sqrt{n}}\right)$