18.c - Review: Sampling Distribution Models

1) Looking at Assignment
2) Categorical vs. Quantitative
3) Example: Baby Weights
4) Assignment Time

Pg. 432, #13, 17, 19, 27, 28, 37, 38
**Categorical vs. Quantitative and the Normal**

**Conditions/Assumptions**
1) Independence Assumption(?) - or OK with
   a) (less than) 10% Condition
   b) Randomization Condition
2) Samples Size Assumption
   c) Success/Failure Condition (≥ 10) or Large Enough Sample

**Categorical - proportion**

\[ N\left( p, \sqrt{\frac{p(1-p)}{n}} \right) \]
\[ SD(p) = \sqrt{\frac{p(1-p)}{n}} \]

**Quantitative - mean**

\[ N\left( \bar{y}, \frac{\sigma}{\sqrt{n}} \right) \]
\[ SD(\bar{y}) = \frac{\sigma}{\sqrt{n}} \]

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**Baby Weights**

- At birth, babies average 7.8 pounds, with a standard deviation of 2.1 pounds. A random sample of 34 babies born to mothers living near a large factory that may be polluting the air and water shows a mean birthweight of only 7.2 pounds. Is that usually low?

\[ z = \frac{7.2 - 7.8}{0.36} \]
\[ z = -1.66 \]

\[ N(7.8, 0.36) \]

\[ P(\bar{y} \leq 7.2) = P(z \leq -1.66) = 0.047 \]
Assignment (Due Thursday, February 19)

1) Read Chapter 18, Pg. 427 - 430

2) Pg. 432c, #21, 23, 25, 39, 31, 41-43, 48

3) Quiz 18 on Thursday