

X = wt. of a package of coffee

$X \sim N(\mu, \sigma)$

$\sigma = .6$
(Known)

Sample info:

$\left\{ \begin{array}{l} n = 25 \\ \bar{X} = 3.4 \end{array} \right\}$

Test: $\left[\begin{array}{l} H_0: \mu = 3 \\ H_a: \mu \neq 3 \end{array} \right]$ @ $\alpha = .10$

- Find:
- (i) Critical Value
 - (ii) Test Statistic
 - (iii) p-Value

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What does this tell us?

Our methods for CIs & Hyp. Tests depend on \bar{X} being Normal. Since the underlying X is Normal, \bar{X} will be also.

What if we weren't told $X \sim N(\mu, \sigma)$?

Since $(n=25) < 30$ we can't use the CLT. So we can't do this Hyp. Test b/c we can't say \bar{X} is Normal

What does this tell us?
Since we know (σ) , we use the Z Statistic;
If σ were unknown, we'd use t instead

