Mean of US male athletes > Mean of US males

$$H_0 : \mu_{\textbf{Athletes}} = 69 \textbf{ inches}$$
$$H_1 : \mu_{\textbf{Athletes}} = 72 \textbf{ inches}$$

Assumptions
- Random sample
- Independent observations
- Known (given) true standard deviation

$$n = \left(\frac{(Z_\alpha + |Z_\beta|) * (\sigma)}{(\mu_1 - \mu_0)} \right)^2$$

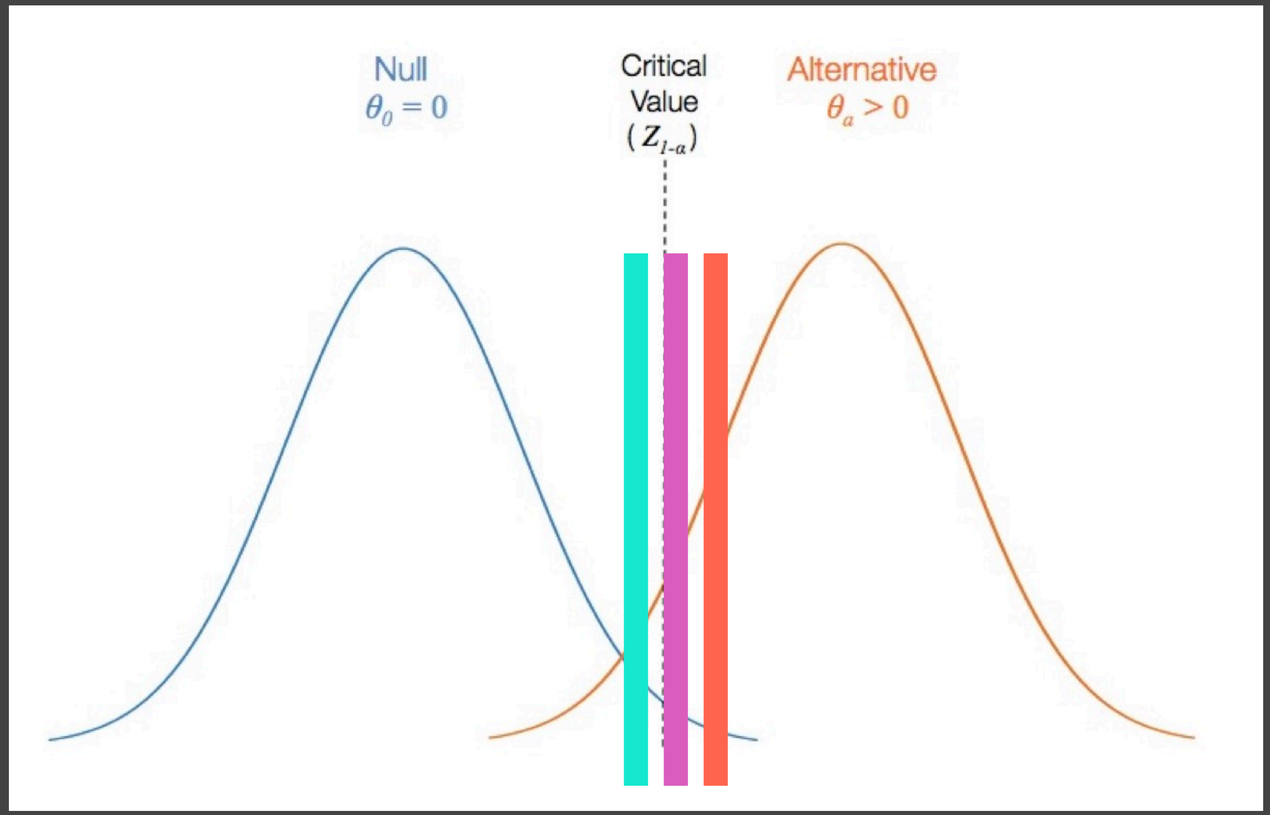
Lecture 21 (50-57)

Power 0.8
Alpha 0.05

Power = 1 - beta

$Z_\alpha =$ **qnorm(p=0.95)**

$Z_\beta =$ **qnorm(p=0.2)**



alpha=0.05 —-> 95% confidence interval will make the same decisions

p-value=0.02

when alpha=0.05,
REJECT
does not contain 0

p-value=0.02

when alpha=0.01,
FAIL TO REJECT
contains 0

99% confidence interval —> alpha=0.01

(1-alpha)% CI

if contain 0 —> FTR null