$$\mu_m = \mu$$

$$\sigma_m^2 = \frac{\sigma^2}{n}$$

$$\sigma_m = \frac{\sigma}{\sqrt{n}} = \sqrt{\frac{\sigma^2}{n}}$$

as n increases

distribution$_m$ becomes normal

$(n = 30)$

1) $H_R: \mu_m < \mu_{m\,Lynch}$

$H_N: \mu_m = \mu_{m\,Lynchburg}$

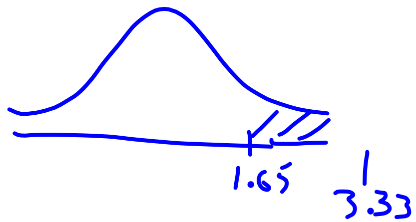
2) Normal, $\mu_m = 100$, $\sigma_m = 3$

$\sigma_m = \frac{\sigma}{\sqrt{n}}$, $n = 25$, SE

3) $z_{c.v.} = 1.65$ $\alpha = .05$

1-tailed 2-tailed $= \pm 1.96$

4) $IQ_m = 110$, $z = \frac{110-100}{3} = 3.33$



p α

$.0013 < .05$

5) $3.33 > 1.65 \therefore$ Reject Null