

5. $n = 1000, X = 250$

a) $\hat{p} = \frac{X}{n} = \frac{250}{1000} = 0.25$

$E = UB - \hat{p}$

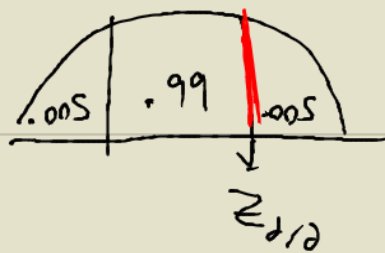
b) 98% C.I. $(.2182, .2819)$ $E = .2819 - 0.25 = .0319$

c) 95% C.I. $(.2232, .2768)$ $E = .2768 - .25 = .0268$

d) SEE ABOVE - TO THE RIGHT

6. $E = 5\%$
 $E = .05$

99% CONFIDENCE



$INV\text{norm}(.995)$

$z_{\alpha/2} = 2.575$

a) \hat{p} IS KNOWN

$\hat{p} = .23$

$n = \hat{p}(1-\hat{p}) \left(\frac{z_{\alpha/2}}{E} \right)^2$

$n = .23(1-.23) \left(\frac{2.575}{.05} \right)^2$

$n = 470$

b) \hat{p} IS NOT KNOWN

$n = 0.25 \left(\frac{z_{\alpha/2}}{E} \right)^2$

$n = 0.25 \left(\frac{2.575}{.05} \right)^2$

$n = 664$