(10) $95\% \rightarrow Z^* = 1.96$

$\hat{p} = \dfrac{317}{400}$ $\qquad \sqrt{\dfrac{\hat{p}(1-\hat{p})}{n}}$

margin of error $= Z^* \sqrt{\dfrac{\hat{p}(1-\hat{p})}{n}}$

$1.96 \sqrt{\dfrac{\frac{317}{400} \cdot \frac{83}{400}}{400}}$

$0.03974 \rightarrow 0.04$

Ch. 8 Test Friday

Random — SRS

Normal — $775 > 10$ ✓
$\quad\quad\quad\quad 325 > 10$ ✓

Independence — The small
enough ($< 10\%$ of population) ✓

$z^* = 1.96$

standard error $= \sqrt{\dfrac{\hat{p}(1-\hat{p})}{n}}$

$\sqrt{\dfrac{\frac{775}{1100} \cdot \frac{325}{1100}}{1100}} \quad \rightsquigarrow \approx 0.0137$

$\left(\dfrac{775}{1100}\right) \pm 1.96(.0137)$

✓ ＼

$$(0.6676, 0.7315)$$

$$\text{estimate} \pm M \text{ of } E$$

$$Z^* \text{stderror} = 0.02$$

$$1.96\sqrt{\frac{\hat{p}(1-\hat{p})}{n}} = 0.02$$

Assume $\hat{p}$ is $\frac{775}{1100} = 0.705$

$$n \geq 1998$$