

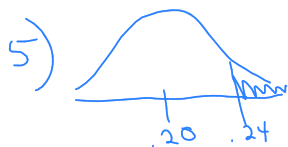
9.2B

$$1) \mu_{\hat{p}} = \frac{1}{3} \quad (= \text{pop. prop.})$$

$$2) \sigma_{\hat{p}} = \sqrt{\frac{\frac{1}{3}(\frac{2}{3})}{60}} = .0609$$

$$3) \text{ approx. normal} \quad \begin{array}{ll} \frac{1}{3}(60) \geq 10 & 60(1-\frac{1}{3}) \geq 10 \\ 20 \geq 10 & 40 \geq 10 \end{array}$$

$$4) \mu_{\hat{p}} = .20 \quad \sigma_{\hat{p}} = \sqrt{\frac{.2(.8)}{250}} = .0253$$



$$z = \frac{.24 - .20}{.0253} = 1.58$$

$$Pr(z > 1.58) = .0571 \quad (\text{calc})$$

9.3B

$$1) \quad z = \frac{24 - 20.4}{5.8} = .62 \quad \Pr(z > .62) = .2676$$

$$2) \quad \mu_{\bar{x}} = 20.4 \quad \sigma_{\bar{x}} = \frac{5.8}{\sqrt{30}} = 1.0589$$

$$3) \quad z = \frac{24 - 20.4}{1.0589} = 3.40 \quad \Pr(z > 3.40) = .0003$$

4) #1 would change

2 + 3 would not change  $\rightarrow$  acc. to CLT, samp. dist.  
is normal even if pop. isn't because  $n \geq 30$   
 $30 \geq 30$