HW #5 pg 412

92 a) B - "Success" = identify black "Failure" = identify not black

I - sampling w/o replacement, sample size less than 10% of all American adults

N - n = 1500

S - p = 0.12

b) $\mu_x = np = 1500(0.12) = 180$

$\sigma_x = 12.5857$

$P(165 \leq X \leq 195) = \text{normal cdf}(165, 195, 180, 12.5857) = 0.7667$

There is a 0.7667 probability that the sample will contain btwn 165 & 195 blacks.

94 $X = \frac{\#\text{ of hits}}{500\text{ bats}} \rightarrow$ binomial distribution $n = 500$, $p = 0.26$

$P(X \geq 150) = 0.0246$ b/c probability is small, it is unlikely for a 0.26 hitter to hit 0.3 by chance

If there are a large # of 0.26 hitters, we would expect about 2% of them to hit 0.3 or higher just by chance