

6.4 Based on U.S. Bureau of Census data, 12% of the men in the United States have earned bachelor's degrees. If 150 U.S. men are randomly selected, find the probability that at least 18 of them have a bachelor's degree.

Is this a binomial experiment ?

✓ F n = 150

✓ I

✓ T

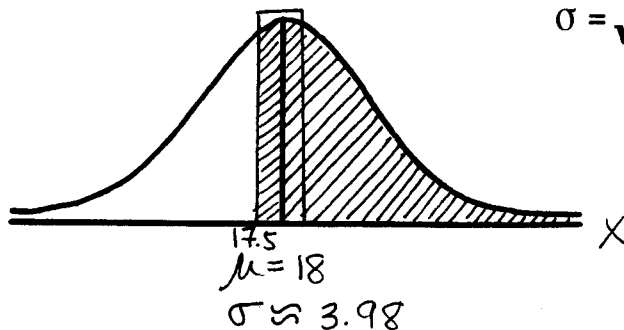
✓ Constant p = 0.12

$$P(X \geq 18) = 1 - \text{binomcdf}(150, .12, 17) \approx 0.537 \approx \boxed{0.54}$$

or use Normal Approximation to Binomial

$$\mu = np = (150)(.12) = 18$$

$$\sigma = \sqrt{npq} = \sqrt{(150)(.12)(.88)} \approx 3.98$$



$$P(X \geq 18) \approx \text{normalcdf}(17.5, 1E99, 18, 3.98) \approx 0.549987 \approx \boxed{0.55}$$

STUDY: Chapter 4: Section 4.3

- Binomial Experiments

Chapter 5: Section 5.6

- Normal Approximation to Binomial