EE 381 Quiz 3 – Practice

Name, I.D. #, and Date: _____

Instructions: No electronics other than a calculator. Show your work for credit. Box your final answer.

(2 pt.) In a survey, 63% of Americans said they own a flat screen TV. If 14 Americans are selected at random, find the probability that exactly nine own a flat screen TV?

(2 pt.) With respect to the sample of 14 Americans in the problem above about flat screen TV's what is the mean and standard deviation of the number of Americans in that sample of 14 who own a flat screen TV?

(3 pt.) You have a fair five-sided die with the faces labeled 1, 2, 3, 4, and 5. Let the RV X denote the top face value after a roll. Use the expectation operator $E(X) = \sum_{\text{all x}} xP(\{X = x\})$ to determine the mean $\mu = E(X)$ and standard deviation $\sigma = \sqrt{\text{var(X)}}$ of X. {NB: $\text{var}(X) = E(X^2) - \mu^2$}.

(3 pt.) You have a fair five-sided die. You roll it three times in a row. Let the RV Z denote the number of times the top face value is 3. Obtain the pdf and use it draw the CDF. Credit for the correct CDF.

$P(\{Y = y\}) = {}_nC_y\, p^y q^{(n-y)}$ and $p = 1 - q$ $\mu = np$ $\sigma = \sqrt{npq}$