BUS 210, Quiz #3, Fall 2018

Name _____ KEY _____

Section _____

Instructions: This quiz is to be completed entirely in class. You may not use cell phones, and you may only access internet resources you are specifically directed to use. There is no data file for this quiz. Complete calculations in a blank Excel file, and upload it to Blackboard for full credit. Place your answers to the bolded questions directly on this page.

1. Suppose that the weight of a typical American ~~male~~ *female* follows a normal distribution with $\mu = 132$ *lbs.*, $\sigma = 21$ *lbs.* Also, suppose that 71.3% of all Americans weigh more than Sally weighs.
   a. **How much does Sally weigh?**

   120.2 1bs

   b. **What percent of American women weigh more than 190 pounds?**

   0.3%

   c. **If Sally weighed 20 pounds more than she does, what percentile would she be in?**

   65th percentile

2. Past experience indicates that 35% of all individuals entering a certain store decide to make a purchase.
   a. **Using the binomial distribution, find the probability that 10 or more of the 30 individuals entering the store in a given hour will decide to make a purchase?**

   64.2%

   b. **Does the situation above satisfy the requirements to apply the normal approximation to the binomial?** [Hint: what is the variance?]

   $npq = 6.825$ Should be > 10

   no

   c. **Use the normal approximation to the binominal to estimate the probability for the situation described in (a).**

   0.649

   64.9%   not bad, but (see above) could be better

Submit your completed Excel file to Blackboard, and submit your paper quiz to your instructor in class.