

KEY

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 follows a normal distribution with $\mu = 180$ lbs., $\sigma = 30$ lbs. Also, suppose that 91.92% of all Americans weigh more than Joe weighs.

a. **How much does Joe weigh?**

138 lbs.

b. **What percent of American men weigh more than 225 pounds?**

6.7%

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

23rd

2. Past experience indicates that 30% 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?**

41.1%

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

6 (though above 10 is better, 5 or more is okay)

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

42.1%

(this is pretty close < 1% difference)

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