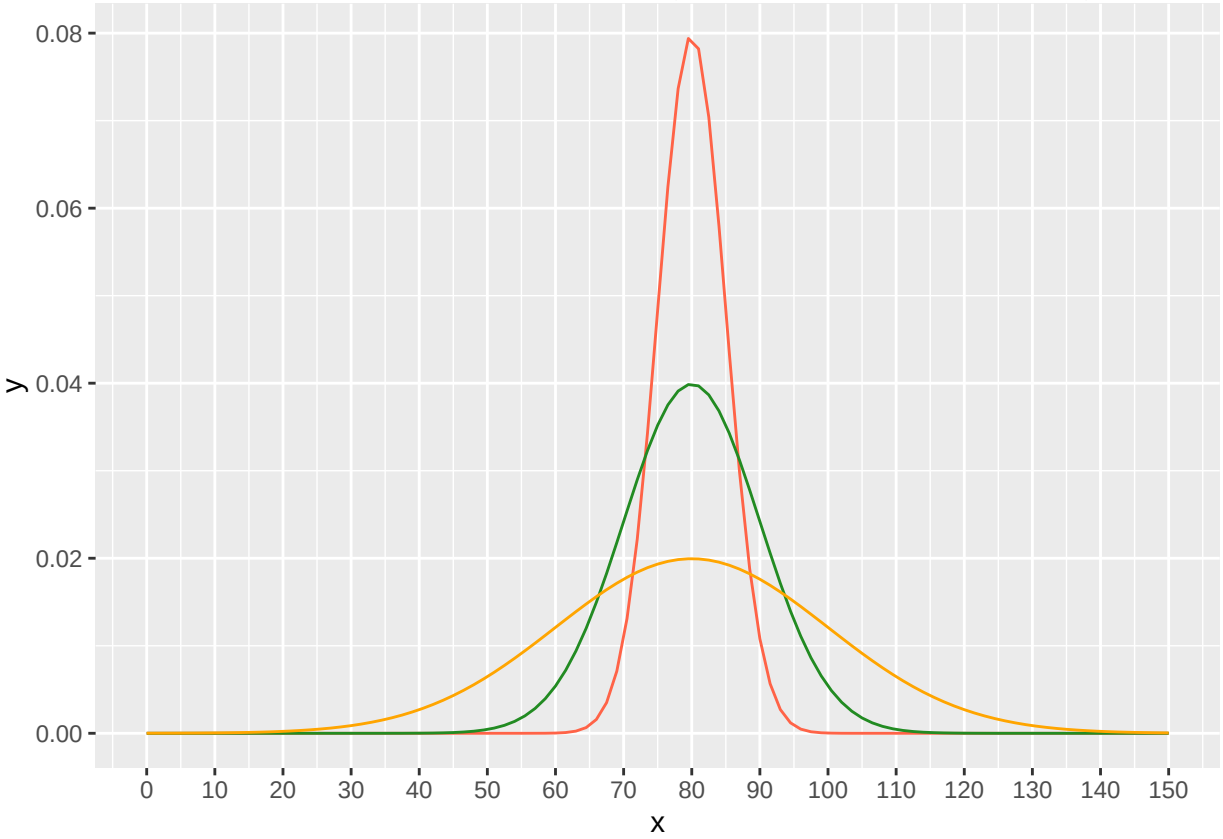
Lab 4 Normal Distribution

your name

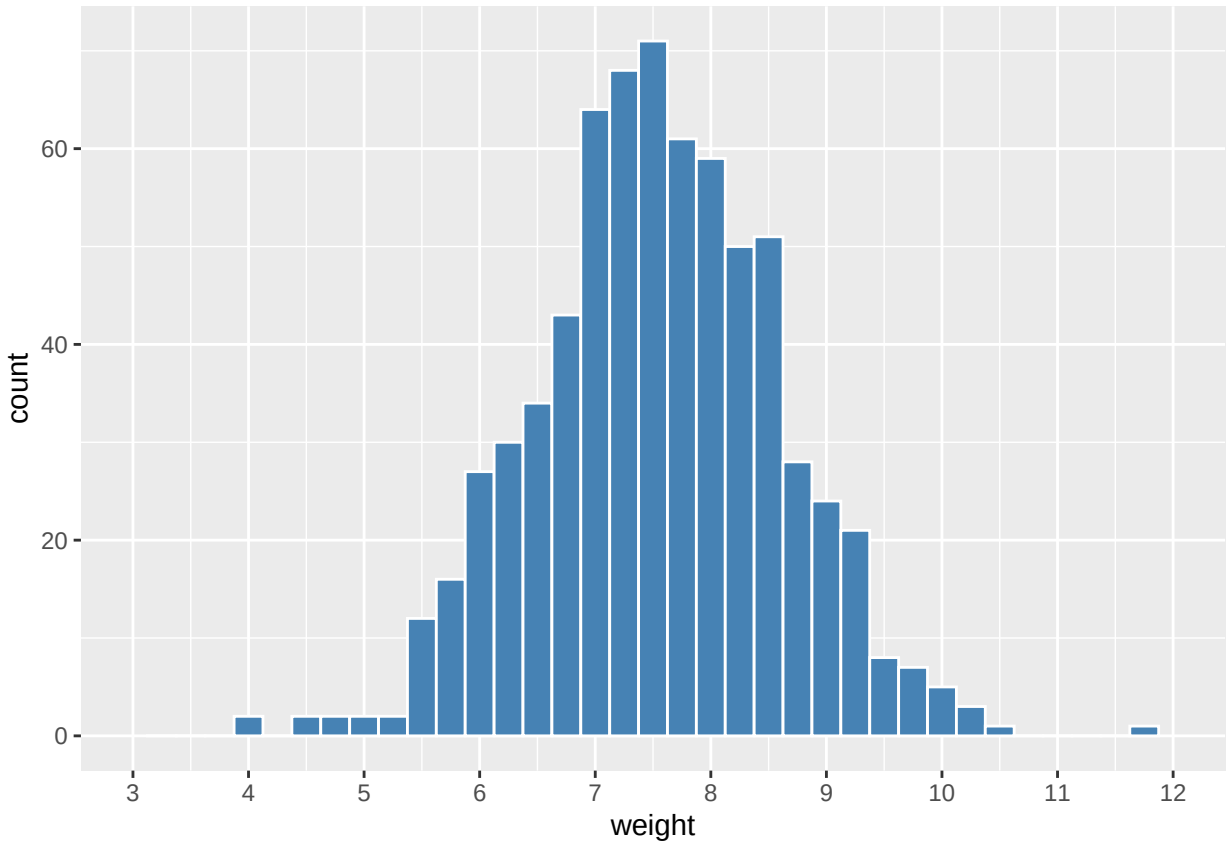
Four Normal Distributions with same means of 80, and standard deviations of 5, 10 and 20.



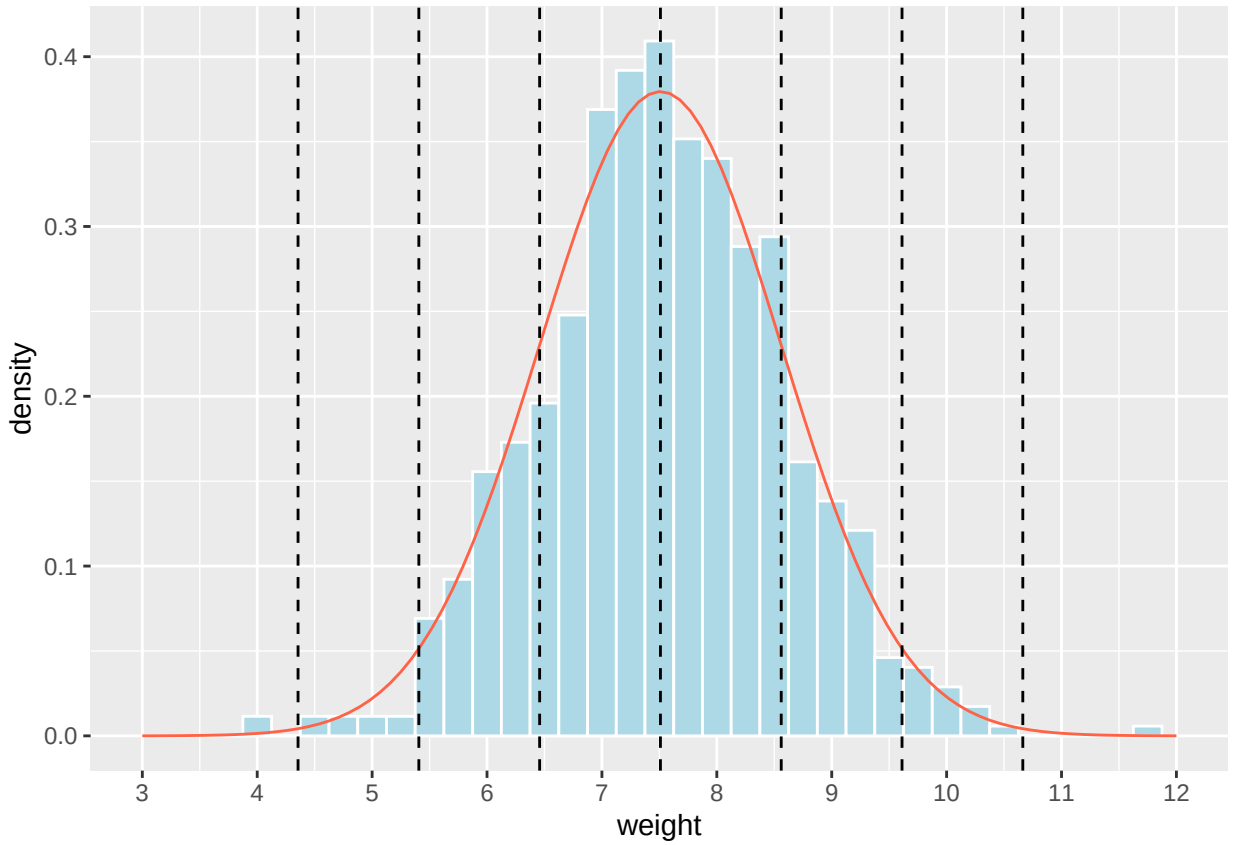
1. Match the colors to the appropiate Normal Distribution.

   N(80,5) is
   N(80,10) is
   N(80,20) is

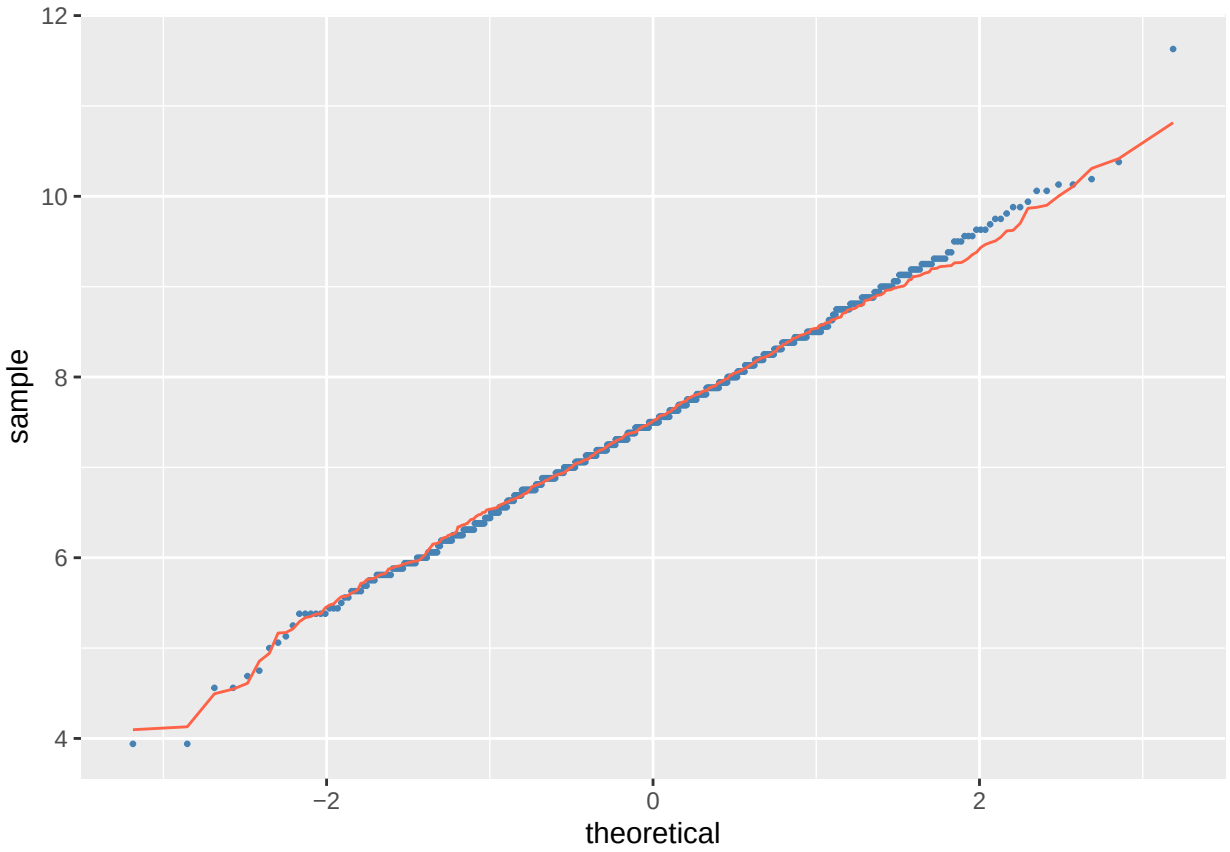
2. Describe the distribution (shape, center, variation)



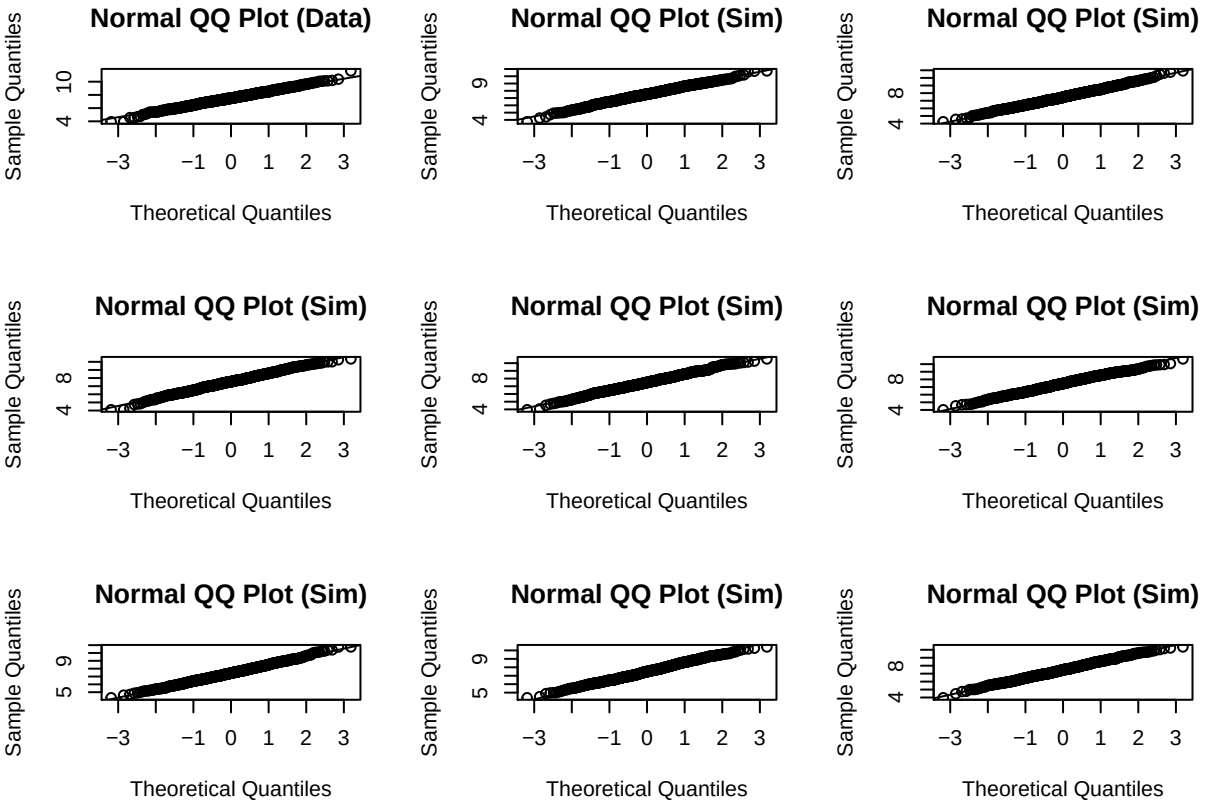
3. Based on the this plot, does it appear that the data follow a nearly normal distribution?



4. Below is a comparison of the simulated data (in red) along with the `nc_ft` real data. Do all of the points fall on the line? How does this plot compare to the probability plot for the real data?



5. Does the normal probability plot for the `weight` look similar to the 8 plots created for the simulated data? That is, do the plots provide evidence that the `weight` is nearly normal?

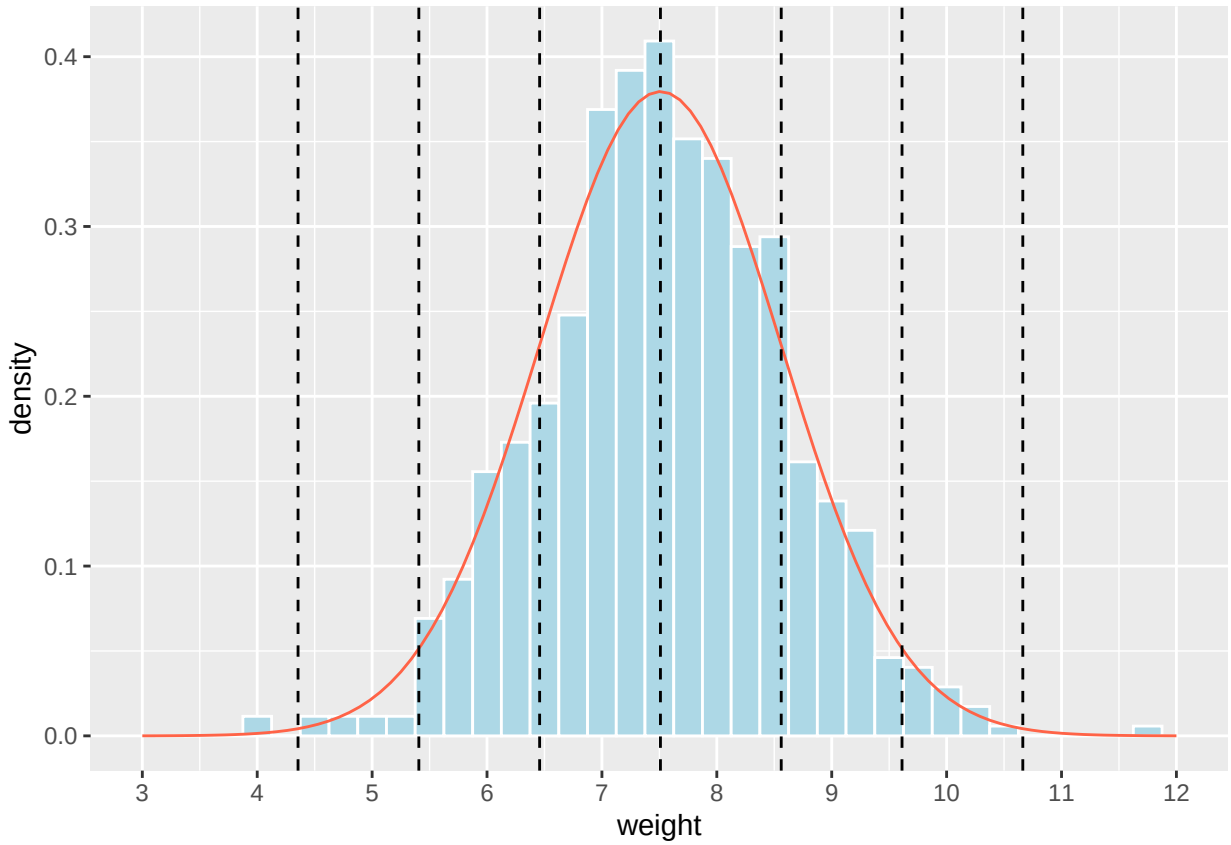


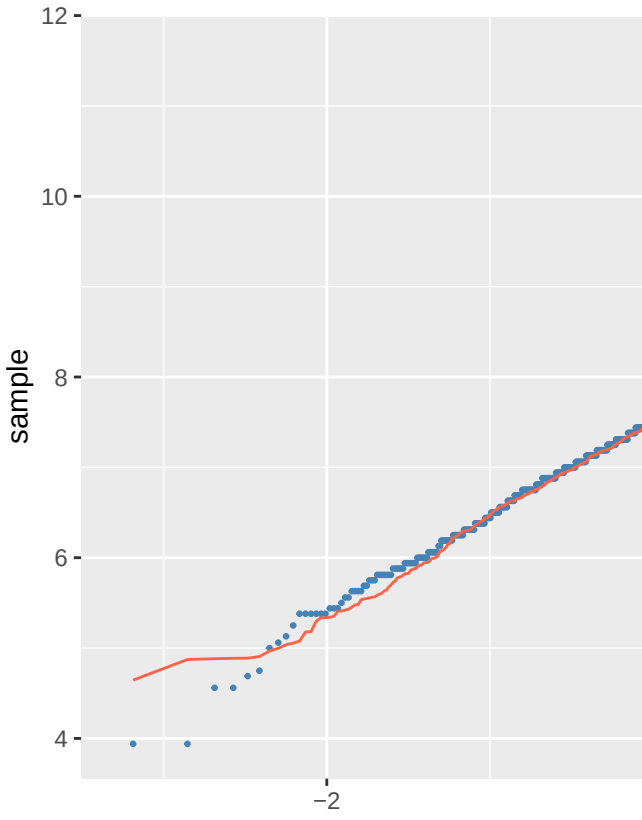
6. Use both methods above to determine the probability that for a birth `weight` less than 7 pounds. Comment on why they are differeny (Hint: look at your graphics)

More Practice

We have just created a procedure to assess a quantitative variable if follows a Normal Distribution.

Step 1: Graph a density histogram and a normal curve (with mean and sd generated from data set)





Step 2: Graph a QQ Plot of the actual data and simulated normal data

Decision: If normal curve and simulated normal data are similar, the data can be approximated by a normal distribution.

Analysize `mage` and `gained` using the 2 steps above and decide if they can be modeled with the Normal Distribution.

7. Complete the analysis outlined above for `mage` and make a decision if `mage` can be modeled with the Normal Distribution (i.e., Step 1 and Step 2). Test your decision by calculating the probability that a mother's age is less than 21.
8. Complete the analysis outlined above for `gained` and make a decision if `gained` can be modeled with the Normal Distribution. Test your decision by calculating the probability that a mother's weight gained is more than 40.