## Lab 2I: R's Normal Distribution Alphabet

Directions: Record your responses to the lab questions in the spaces provided.
Where we're headed
Get set up
Is it normal?  • Is the distribution close to normal? Explain how you determined this. Describe the center and spread of the distribution.
Compute the mean difference in the age of the actual survivors and the actual non-survivors.
<ul> <li>Using the normal model</li> <li>Draw a sketch of a normal curve. Label the mean age difference, based on your shuffles, and the actual age difference of survivors minus non-survivors from the actual data. Then, shade in the area, under normal the curve, that is smaller than the actual difference.</li> </ul>

Extreme probabilities
Simulating normal draws
P's and Q's
<ul> <li>On your own</li> <li>Were women on the Titanic typically younger than men?</li> <li>Use a histogram, 500 random shuffles and a normal model to justify your answer.</li> </ul>
<ul> <li>Using 500 random shuffles and a normal model, how much taller would the typical male have to be than the typical female inorder for the difference to be in the upper 1% by chance alone.</li> </ul>

• How can we use this value to justify the claim that the average Male in our data is taller

than the average Female?