

Name_____

Date_____

LAB 2I: R's Normal Distribution Alphabet *Response Sheet*

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 and write down the mean difference in the age of the *actual* survivors and the *actual* non-survivors.

Using the normal model

- 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 the normal curve, that is *smaller* than the actual difference.

Extreme probabilities

Simulating normal draws

P's and Q's

- How tall can a man be and still be in the shortest 25% of heights if the mean height is 67 inches with a standard deviation of 3 inches?

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On your own

Using the titanic data:

- **Were women on the Titanic typically younger than men?**

- **Use a histogram, 500 random shuffles and a normal model to answer the question in the bullet above.**

Using the cdc data:

- **Using 500 random shuffles and a normal model, how much taller would the typical male have to be than the typical female in order for the difference to be in the upper 1% by chance alone?**

- **How can we use this value to justify the claim that the average Male in our data is taller than the average Female?**