

Math 153 - Quiz 5

March 2, 2017

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary. YOU MUST WORK INDIVIDUALLY.

1. (1 point) In a probability experiment, what is an event?

2. (2 points) When John went to work at the liquor store, he wondered how good he was at guessing customers' ages. For the first 38 customers, John guessed correctly 20 times.
 - (a) Estimate the probability that John guesses an age correctly.

 - (b) Is your estimate a theoretical, experimental, geometric, or subjective probability?

3. (1 point) A company is developing a new type of lithium ion battery. While the battery has not yet been tested, engineers say they are 85% certain that the battery will have double the life of existing batteries. What type of probability are the engineers assigning?

4. (6 points) Suppose a letter is selected at random from the word *ASSESSEE*.
 - (a) What is the sample space for this experiment?

 - (b) Is each outcome in your sample space equally likely? Why?

 - (c) Steve made the claim that since there are three different letters in the word *ASSESSEE*, then the probability of each letter must be $1/3$. What is wrong with Steve's reasoning?

 - (d) In part (c), what type of probability did Steve attempt to assign?

 - (e) Refer to the sample space you gave in part (a). Give an example of an event.