

Math 153 - Quiz 5

October 1, 2015

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (5 points) A letter is selected at random from the word *EYJAFJALLAJOKULL*.

(a) What is the sample space for this experiment?

$\{ E, Y, J, A, F, L, O, K, U \}$

(b) What is the event of selecting a vowel?

$\{ E, A, O, U \}$

(c) What is the probability of the complement of your event in part (b)?

$$1 - \frac{6}{16} = \boxed{\frac{10}{16}}$$

(d) Is your probability in part (c) experimental, theoretical, or subjective?

THEORETICAL

2. (2 points) 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? Explain.

SUBJECTIVE --- THEY ARE ASSIGNING
THE PROBABILITY BASED ON THEIR
EXPERIENCE & KNOWLEDGE, NOT BY COUNTING OR

3. (3 points) If the odds against the event *A* are 6 : 25, what is the probability of *A*? *measuring.*

AGAINST $\frac{6}{25}$

IN FAVOR $\frac{25}{6}$

\Rightarrow

Prob is $\frac{25}{31}$