Math 153 - Quiz 5
February 22, 2018

Name key

Score _____

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

1. (7 points) A jar contains 5 green marbles, 8 blue marbles, and 9 red marbles. A marble is selected at random.

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

   $\{g, b, r\}$

   (b) What is the probability of each outcome in your sample space?

   $P(\{g\}) = \frac{5}{22}$, $P(\{b\}) = \frac{8}{22}$, $P(\{r\}) = \frac{9}{22}$

   (c) Are your probabilities in part (b) experimental, (theoretical) or subjective?

   (d) If A is the event of drawing a blue marble, then what is $\overline{A}$? What is the probability of $\overline{A}$?

   $P(A) = \frac{8}{22} \Rightarrow$ $P(\overline{A}) = \frac{14}{22}$

   (e) Jerry actually carried out the experiment 87 times. In all, he selected 29 blue marbles, 23 green marbles, and 35 red marbles. What are his experimental probabilities?

Blue	Green	Red
$\frac{29}{87}$	$\frac{23}{87}$	$\frac{35}{87}$

2. (1 point) A father said to his son, "There is no way you're taking the new car. You're a terrible driver! There's a 99% chance you'd destroy the car!" What kind of probability did the father compute? Choose from experimental, theoretical, geometric, or subjective.

Subjective

3. (2 points) A letter is selected at random from the word EYJAFJALLAJOKULL.

   (a) What is a possible sample space?

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

   (b) What is the probability of selecting the letter J or the letter L?

7 OF THEM

16 LETTERS TOTAL.

$\frac{7}{16}$