Math 153 - Quiz 5

March 3, 2016

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 *ZENZIZENIC*.

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

   $\{Z, E, N, I, C\}$

   (b) Determine the probability of each outcome in your sample space.

   $P(\{Z\}) = \frac{3}{10}$, $P(\{E\}) = \frac{2}{10}$, $P(\{N\}) = \frac{2}{10}$, $P(\{I\}) = \frac{2}{10}$, $P(\{C\}) = \frac{1}{10}$

   (c) What is the event of selecting a letter that comes before G in the alphabet?

   $\{E, C\}$

   (d) What is the probability of the event in part (c)?

   $P(\{E, C\}) = \frac{2}{10} + \frac{1}{10} = \frac{3}{10}$

2. (2 points) The odds against the event A are 3:10. Determine the probability of A and the odds in favor of A.

   ODDS IN FAVOR ARE $\frac{10}{3}$

   $P(A) = 10/13$

3. (1 point) If $P(B) = 0.20$, determine $P(\overline{B})$.

   $P(\overline{B}) = 1 - 0.20 = 0.80$

4. (2 points) John flipped a coin 35 times, and it landed heads up 20 times. What is the experimental probability of the coin landing heads up? What is the theoretical probability of it landing heads up?

   EXP. PROB. IS $\frac{20}{35}$

   THEO. PROB. IS $\frac{1}{2}$