

Math 112 - Quiz 10

December 1, 2016

Name key Score _____

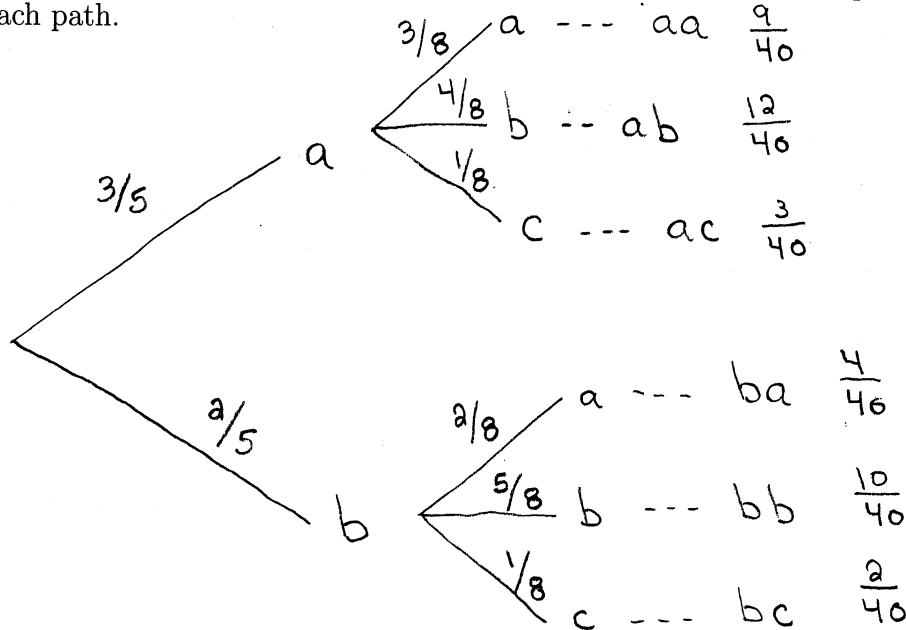
Show all work to receive full credit. Supply explanations when necessary.

1. (5 points) A letter is selected at random from the first box and placed into the second box. Then a letter is selected at random from the second box.

a a a b b

a a b b b b c

- (a) Sketch the complete tree diagram for this experiment. Include the probabilities of each path.



- (b) What is the probability of selecting the letter b from the 2nd box?

$\{ab, bb\}$

$$\frac{12}{40} + \frac{10}{40} = \frac{22}{40}$$

- (c) What is the probability of selecting two different letters?

$\{ab, ac, ba, bc\}$

$$\frac{12}{40} + \frac{3}{40} + \frac{4}{40} + \frac{2}{40} = \frac{21}{40}$$

2. (2 points) If the odds against Big Joe Smasher winning the fight are 9 to 4, what is the probability of his winning?

$$\text{ODDS AGAINST} = \frac{9}{4}$$

$$\text{ODDS FOR} = \frac{4}{9} \Rightarrow \text{PROB IS } \frac{4}{4+9} = \frac{4}{13}$$

3. (2 points) Four letters are selected from the word *MISSISSIPPI* without replacement. What is the probability of spelling *SIMP* (in order)?

$$\frac{4}{11} \text{ S } \frac{4}{10} \text{ I } \frac{1}{9} \text{ M } \frac{2}{8} \text{ P}$$

$$\frac{32}{7920}$$

4. (1 points) In 50 observations, 38 drivers did not stop at a certain stop sign. Based on these observations, what is the probability that a driver will stop?

$$50 - 38 = 12$$

$$\frac{12}{50}$$