

Math 099 - Assignment 10

April 23, 2019

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary. This assignment is worth 5 points.

1. A die is rolled one time. Determine the probability of

(a) rolling a 4.

$$\frac{1}{6}$$

(b) rolling an even number.

$$\{2, 4, 6\}$$

$$\frac{3}{6}$$

(c) rolling a number greater than 0.

$$\{1, 2, 3, 4, 5, 6\}$$

$$\frac{6}{6} = 1$$

(d) rolling a number less than 0.

$$\emptyset$$

$$0$$

(e) rolling a number greater than 3 or an odd number.

$$\{1, 3, 4, 5, 6\}$$

$$\frac{5}{6}$$

2. A list contains the names of five math students, two English students, and three history students. One name is selected at random. Determine the probability of

(a) selecting a math student.

$$\frac{5}{10}$$

(b) selecting a math or English student.

$$\frac{7}{10}$$

(c) selecting a student that is not a math student.

$$1 - \frac{5}{10} = \frac{5}{10}$$

10 STUDENTS

3. In studying the effectiveness of a test preparation course, the following data were collected from a group of students.

| | Passed Test | Failed Test |
|------------------------------|-------------|-------------|
| Took Test-Prep Class | 139 | 43 |
| Did not take Test-Prep Class | 214 | 104 |

$$139 + 43 + 214 + 104 = 500$$

Answer the following questions based on these results.

- (a) What is the probability that a person passes the test?

$$\frac{139 + 214}{500} = \frac{353}{500}$$

- (b) What is the probability that a person takes the test preparation class and passes the test?

$$\frac{139}{500}$$

- (c) What is the probability that a person takes the test preparation class or passes the test?

$$\frac{214 + 139 + 43}{500} = \frac{396}{500}$$

- (d) What is the probability that a person does not pass the test?

$$1 - \frac{353}{500} = \frac{147}{500}$$

4. A letter is selected at random from the word *MISSISSIPPI*.

11 LETTERS

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

$$\{M, I, S, P\}$$

- (b) What is the probability of each outcome?

$$P(\{S\}) = \frac{4}{11}$$

$$P(\{I\}) = \frac{4}{11}$$

$$P(\{P\}) = \frac{2}{11}$$

$$P(\{M\}) = \frac{1}{11}$$