

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Per: \_\_\_\_\_

Lesson 5.2.2 Homework

**5-38. A BETTER CHANCE OF WINNING**

Each of the problems below describes two different games you can play with a random number generator. In each case, you will win if the random number generator gives you the indicated kind of number. Find the theoretical probability that you win each game below. Decide and justify whether Game I or Game II in each part, (a) through (c), gives you a better chance of winning.

Game I

Game II

- |    |  |  |
|----|--|--|
| a. | Picking a prime number from the integers between 1 and 20  | Picking a prime number from the integers between 21 and 40 |
| b. | Picking a multiple of 5 from the integers between 1 and 20 | Picking a multiple of 5 from the integers between 1 and 40 |
| c. | Picking a multiple of 7 from the integers between 1 and 40 | Picking a multiple of 6 from the integers between 1 and 25 |

**5-39.** If you used a random number generator for the numbers from 1 through 20 to play a game, what is the theoretical probability of getting each of these outcomes?

- A multiple of 3 *or* a multiple of 7,  $P(\text{multiple of 3 or multiple of 7})$
- $P(\text{even or odd})$
- $P(\text{prime or 1})$
- How did you find the probabilities of these events? Be ready to share your ideas with the class.

**5-40.** The average annual rainfall in Tucson, Arizona is 12 inches. Between January and April, 2.4 inches of rain fell. What percentage of the annual rainfall fell after April (May through December)? You may want to draw a diagram to organize information.

**5-41.** Evaluate the expression  $2x^2 + x + 6$  for the given values of  $x$  below.

- $x = 3$
- $x = -2$
- $x = 0$
- $x = 5$