8 – HW#1 Theoretical vs Experimental

Name: _____ Per: _____

You spin a spinner that has 15 equal-sized sections numbered 1 to 15. Find the theoretical probability of landing on the given section(s) of the spinner.

1. *P*(15)   **2.** *P*(odd number)   **3.** *P*(even number)

4. *P*(not 5)   **5.** *P*(less than 5)   **6.** *P*(greater than 8)

7. *P*(multiple of 5)   **8.** *P*(less than 16)   **9.** *P*(prime number)

10. You roll a number cube. What is the probability that you will roll a number less than 5?

11. The probability that a spinner will land on a red section is $\dfrac{1}{6}$. What is the probability that the spinner will not land on a red section?

You choose a marble at random from a bag containing 2 red marbles, 4 green marbles, and 3 blue marbles. Find the probability.

12. Probability of red   **13.** Probability of blue

14. Probability of not green   **15.** Probability of not red

16. Probability of green   **17.** Probability of not blue

18. You roll a number cube. What is the probability that you will roll an even number?

One hundred twenty randomly selected students at Roosevelt High School were asked to name their favorite sport. The results are shown in the table. Find the experimental probability that a student selected at random makes the given response.

Favorite Sport Survey

Sport	Number of Responses
Basketball	30
Baseball	22
Football	34
Soccer	20
Other	14

19. *P*(basketball)

20. *P*(soccer)

21. *P*(baseball)

22. *P*(football

23. A meteorologist says that the chance of rain today is 0.35. What is the probability that it will not rain?

24. Hank usually makes 11 out of every 20 of his free throws. What is the probability that he will miss his next free throw?

25. The Widget Company randomly selects its widgets and checks for defects. If 5 of the 300 selected widgets are defective, what is the probability that a widget is defective? How many defective widgets would you expect in the 1500 widgets manufactured today?

26. a. You recently purchased a cool new board game that has a spinner. The spaces are equally divided into six wedges and numbered 1-6. What is the theoretical probability that you will land on each number?

b. You play your new game and record your spins. What is the experimental probability of landing on each number?

Spinner	1	2	3	4	5	6
Frequency	11	7	19	8	2	12

c. Compare the theoretical probability to the experimental probability. Does your experiment match the predicted outcome?