Probability Practice Test Name: _____

Unless directed otherwise, express all probabilities as a percent, rounding to the nearest 10^{th} of a percent. Show or explain any work for partial credit.

Find the number of possible outcomes for each situation.

1. A computer dials a random 7-digit number. 1. _____

2. In the game *Twister*®, one spinner can land on red, green, blue, or yellow and another can land on right foot, left foot, right hand, or left hand.

2. _____

Find the number of possible arrangements for each permutation or combination.

3. How many ways can a track coach arrange his 4-runner lineup using the 7 sprinters on his team?

3. _____

4. How many ways can you choose 5 DVDs from a list of 25? 4. _____

A box containing markers has 5 red, 4 green, 7 blue, 6 black, and 3 yellow. Find each probability when selecting one marker at random. Then tell whether the probability is favorable or not.

5. *P*(red or yellow) 5. _____

6. *P*(not green) 6. _____

Find the odds. Express your answer as a ratio (reduced to simplest terms).

7. A black Jack is selected from a standard deck of 52 cards. 7. _____

8. During the regular season, the Cincinnati Reds won about 61% of their 162 games. Considering their record, what are the odds that they will win the first game of their divisional playoffs?

8. _____

Considering a standard deck of cards, find the probability of each event. After each draw, the card is replaced and the deck is shuffled.

9. *P*(an Ace, then a face card) 9. _____

10. *P*(2 Clubs in a row) 10. _____

Considering a standard deck of cards, find the probability of each event. After each draw, the card is *NOT* replaced!

11. *P*(back-to-back face cards) 11. _____

12. *P*(an ace, then a numbered card) 12. _____

Consider tossing a pair of dice. Find the probability of each event. Each toss consists of throwing *both* die once.

13. *P*(a sum of either 7 or 11) 13. _____

14. *P*(one die is a "6" or a sum greater than 7) 14. _____

Conditional Probability: Jar A contains 1 red ball and 4 white balls. Jar B contains 3 red balls and 2 white ball. A 12-sided die is rolled. If it shows a number from 1-9, a ball is picked randomly from jar A. If it shows a number from 10-12, a ball is picked from jar B.

15. If a red ball is picked, find the probability that it is from jar B. 15. _____

16. If a white ball is picked, find the probability that it is from jar B. 16. _____

Binomial Probability: 4 out of 10 dentists recommend *Berry White* brand toothpaste. If you ask 5 dentists at random, what is the probability that:

17. 3 of the 5 dentists recommend ***Berry White***? 17. _____

18. **At least** 3 of the 5 dentists recommend ***Berry White***? 18. _____

Find the probability. Express your answer as a percent (to the nearest 100^{th}).

19. On a 10-question, 4-choice, multiple choice test, what is the probability of guessing exactly six questions correctly?

19. _____

20. In the game *Parcheesi* (the royal game of India), a marble must be placed back "home" if 3 doubles are thrown in a row using a standard pair of dice. What is the probability of throwing 3 doubles in a row?

20. _____