

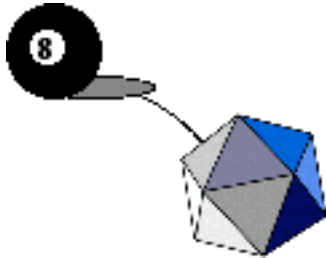
Name _____

Circle all answers

1. A box has 2 red chips, 2 blue chips, and 1 green chip. Two chips are randomly selected.
 - a) List the elements of the event space.
 - b) What is the probability of selecting 2 blue chips?
2. The odds of a certain bill's passing through the senate are 7 to 5.
 - a) What is the probability that the bill would be passed?
 - b) What are the odds of the bill **NOT** passing?
3. The digits 0 through 9 are written on slips of paper. An experiment consists of randomly selecting one numbered slip of paper. Determine the following probabilities.
 - a) P(obtaining a prime number).
 - b) P(obtaining a number divisible by 4).
 - c) P(obtaining an odd number).
4. A box contains 7 red marbles and 3 blue marbles. An experiment consists of randomly selecting 2 marbles. Determine the probability of obtaining 2 red marbles if the first marble selected is **not** returned to the box before the second marble is selected.
5. A game consists of tossing a coin and rolling an ordinary die. If the player tosses a head and rolls an even number, the player wins \$3. Otherwise, the player pays \$1. Explain why this is or is not a fair game.
6.
 - a) How many ways can we arrange the letters in the word *H A L L O W E E N* ?
 - b) How many *words* can we make from the letters in the word *W I L K E S* ?

7. The manufacturer of a certain brand of cereal puts a coupon for a free box of cereal in 20 percent of its boxes. If three boxes are purchased,
- what is the probability of obtaining at least 1 coupon?
 - what is the probability of obtaining exactly 2 coupons?

8. If 11 of the faces of the icosahedron in the "Magic 8-Ball" yield positive results, 4 of the faces yield negative results and 5 of the faces require that you "try again", what is the probability of achieving a positive result in at most three (3) queries?



9. A basket contains 12 apples and 10 oranges. John is to choose an apple *or* an orange, and then Jane is to choose an apple *and* an orange. Jane would have more choices if John were to choose which type of fruit? (*Explain your answer*)
10. A fast food restaurant offers barbecues with the following options - special sauce, cheese, pickle-relish and onions. How many ways can this barbecue be prepared?

11. What exactly does she mean

" the probability of rolling a sum of 7 with a pair of fair dice is $\frac{1}{6}$ "



12. There are 6 wheel bearings in a box. Without knowing that two of them are defective, an auto mechanic selects two of them. What is the probability that at least one of the bearings selected is defective?
- You should be able to solve this problem by listing the entire event space. What is the correct answer?
 - Explain exactly how you and your class would solve this problem using the simulation model developed by the *Quantitative Literacy Project*.

