

Name _____
Probability _____

Color _____
Date _____

Probability

1. Jenny is trying to determine different outfits she can wear to work

Jenny's clothes		
Sweaters	Pants	Shoes
White	Gray	Heels
Pink	Black	Flats
Black	Tan	

a. How many different outfits can be designed? (List all possible outcomes).

SHOW WORK!

List

Tree Diagram:

of outcomes = _____

b. Use the Counting Principle to determine the number of possible outcomes you can have for Jenny's outfits. **SHOW WORK!** Express in lowest terms

c. If the outfits are chosen randomly, what is the probability that a Jenny's outfit will include her favorite pair of gray pants? Express in lowest terms

d. If the outfits are chosen randomly, what is the probability that Jenny's outfit will include will include her white sweater, black pants, and flats?

e. Jenny can also accessorize her outfits with a necklace, belt, or scarf. How many different outfits can be designed that an accessory? **SHOW WORK!** Use FCP!

2. Answer each question in **complete sentences**.

a. What does the probability of 1 mean?

b. What does the probability of 0 mean?

c. What is theoretical probability?

d. What is experimental probability?

3. A toy company finds that the experimental probability of manufacturing a defective bouncy ball is 7 out of 50. About how many defective bouncy balls are likely to be in a batch of 1,400?

4. A player selects three cards from a deck. Find the probability that all three cards were heart or diamond. Express in lowest terms. *You replace each card.*

5. Kristin had a bag of hard candies; four were grape, five were cherry, and six were lemon flavored. She ate one candy and gave one to her friend. What is the probability that both candies were lemon flavored? Express in lowest terms.

6. A bag contains 4 black tiles and 2 white tiles.

a. How likely is it that you will draw a black or white tile from the bag?

b. How likely is it that you will draw a blue tile?

c. If you add two more white tiles to the bag, would it be more likely to draw a white tile or black tile?

7. Alex has 4 red marbles, 3 blue marbles, 2 yellow marbles, 6 purple marbles, and one white marble. Alex picked a marble out of the bag, recorded the color in the chart (to the right), then replaced the marble. He repeated this experiment fifteen times.

COLORS	FREQUENCY
Red	3
Blue	3
Yellow	1
Purple	6
White	2

- a. What is Alex's experimental probability of getting a blue?
- b. What is Alex's theoretical probability of getting a blue?
8. Nicholette decided to pick two marbles out of the bag and then replaces them after each pick. The bag consists of five red marbles, three blue marbles, two white, four yellow, and six purple. What is the probability of Nicholette getting each of the following: SHOW WORK! Express in lowest terms. (one point each)

a. $P(\text{purple, white})$

b. $P(\text{blue})$

c. $P(\text{not blue})$

d. $P(\text{yellow, then purple})$

e. $P(\text{purple, yellow})$ no replacement

f. $P(\text{red, white})$ no replacement

