





Megan used a standard deck of 52 cards and selected a card at random. She recorded the suit of the card she picked, and then replaced the card. The results are in the table below.

<b>Diamonds</b>	
<b>Hearts</b>	
<b>Spades</b>	
<b>Clubs</b>	

- Based on her results, what is the experimental probability of selecting a heart?
- What is the theoretical probability of selecting a heart?
- Based on her results, what is the experimental probability of selecting a diamond or a spade?
- What is the theoretical probability of selecting a diamond or a spade?
- Compare these results, and describe your findings.
- Dale conducted a survey of the students in his classes to observe the distribution of eye color. The table shows the results of his survey.

<b>Eye color</b>	Blue	Brown	Green	Hazel
<b>Number</b>	12	58	2	8

- Find the experimental probability distribution for each eye color.  
 $P(\text{blue}) = \underline{\hspace{2cm}}$        $P(\text{brown}) = \underline{\hspace{2cm}}$        $P(\text{green}) = \underline{\hspace{2cm}}$        $P(\text{hazel}) = \underline{\hspace{2cm}}$
- Based on the survey, what is the experimental probability that a student in Dale's class has blue or green eyes?
- Based on the survey, what is the experimental probability that a student in Dale's class does not have green or hazel eyes?
- If the distribution of eye color in Dale's grade is similar to the distribution in his classes, about how many of the 360 students in his grade would be expected to have brown eyes?

7. Your sock drawer is a mess! You just shove all of your socks in the drawer without worrying about finding matches. Your aunt asks how many pairs of each color you have. You know that you have 32 pairs of socks, or 64 individual socks in four different colors: white, blue, black, and tan. You do not want to count all of your socks, so you randomly pick 20 individual socks and predict the number from your results.

Color of sock	White	Blue	Black	Tan
Number of socks	12	1	3	4

A. Find the experimental probability of each:

$P(\text{white}) = \underline{\hspace{2cm}}$        $P(\text{blue}) = \underline{\hspace{2cm}}$        $P(\text{black}) = \underline{\hspace{2cm}}$        $P(\text{tan}) = \underline{\hspace{2cm}}$

B. Based on your experiment, how many socks of each color are in your drawer? Show your work!

White =                           Blue =                           Black =                           Tan =                     

C. Based on your results, how many pairs of each sock are in your drawer?

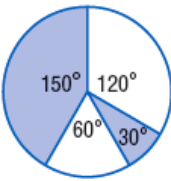
White =                           Blue =                           Black =                           Tan =                     

D. Your drawer actually contains 16 pairs of white socks, 2 pairs of blue socks, 6 pairs of black socks, and 8 pairs of white socks. How accurate was your prediction?

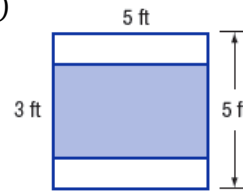
## Unit 6 Day 6 HW

- 1) A baseball collector checked 350 cards in case on the shelf and found that 85 of them were damaged. Find the experimental probability of the cards being damaged. Show your work.
- 2) Jimmy rolls a number cube 30 times. He records that the number 6 was rolled 9 times. According to Jimmy's records, what is the experimental probability of rolling a 6? What is the theoretical probability of rolling a 6? Compare the experimental and theoretical.
- 3) Find the probability that a randomly thrown dart will land in the shaded region of each dartboard. Write your answer as a percentage.

a.)



b.)




- 4) Antonia has 9 pairs of white socks and 7 pairs of black socks. Without looking, she pulls a black sock from the drawer. What is the probability that the next sock she pulls out will also be black?
- 5) Lenny tosses a nickel 50 times. It lands heads up 32 times and tails 18 times. What is the experimental probability that the nickel lands tails? What is the theoretical probability of a nickel landing on tails? Compare the experimental and theoretical.
- 6) A car manufacturer randomly selected 5,000 cars from their production line and found that 85 had some defects. If 100,000 cars are produced by this manufacturer, how many cars can be expected to have defects?

The following advertisement appeared in the Sunday paper:

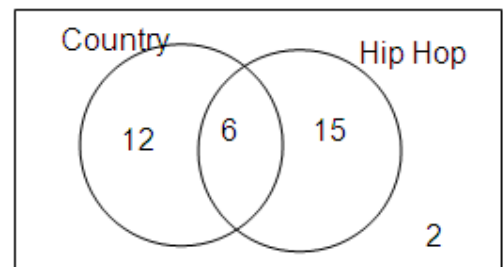
**Chew DentaGum!**

4 out of 5 dentists surveyed agree that chewing DentaGum after eating reduces the risk of tooth decay! So enjoy a piece of delicious DentaGum and get fewer cavities!



10 dentists were surveyed.

- 7) According to the ad, what is the probability that a dentist chosen at random does not agree that chewing DentaGum after meals reduces the risk of tooth decay?
- 8) Is this probability theoretical or experimental? How do you know?
- 9) Do you think that this advertisement is trying to influence the consumer to buy DentaGum? Why or why not?
- 10) What could be done to make this advertisement more believable?
- 11.) Given the Venn Diagram of a class on their music preference, answer the following questions:



- a.) How many students like country or hip hop? \_\_\_\_\_
- b.) How many students like country and hip hop? \_\_\_\_\_
- c.) What is the difference between the union and the intersection?
- d.) What is the probability of a student liking hip hop? \_\_\_\_\_
- e.) How many students do not like country? \_\_\_\_\_
- f.) What is the probability of a student not liking either hip hop or country? \_\_\_\_\_