1. For each trial, list the possible outcomes.

a. tossing a coin

b. rolling a die with faces numbered 1-6

c. the sum when rolling 2 six-sided dice

d. spinning the pointer on a dial divided into sections A-E

2. The table below shows the distribution by fragrance of candles in a 20-candle assortment pack.

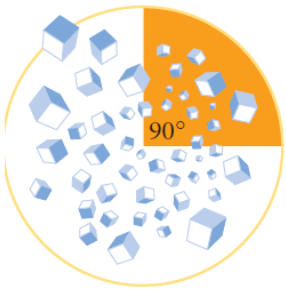
	Outcomes					
	Vanilla	Orange	Strawberry	Cinnamon	Winter	Total
Number	4	2	6	5	3	20
Theoretical probability						

Suppose these 20 candles are put into a box. If you reach into the box without looking, what is the probability that you will pull out either a strawberry or a cinnamon candle? In other words, what is P(S or C)?

What is P(W or S or V)?

Suppose all 20-candle assortment packs made by this company have the same number of each type of candle listed above. If you empty ten assortment packs into a huge box, what is P(C) for the huge box? Explain why this is so.

3. One hundred tiny cubes were dropped onto a circle like the one at right, and all 100 cubes landed inside the circle. Twenty-seven cubes were completely or more than halfway inside the shaded region.



a. Based on what happened, what is the observed probability of a cube landing in the shaded area?

b. What is the theoretical probability in this situation? Explain your answer.

First determine if the problem is permutation or combination. Then solve.

1.) A record club offers a choice of 9 records from a list of 60. In how many ways can a member make a selection?

A.) Permutations, because the order of the records selected does matter.
B.) Combinations, because the order of the records selected does not matter.

2.) One hundred people purchase lottery tickets. Three winning tickets will be selected at random. If first prize is $100, second prize is $50, and third prize is $10, in how many different ways can the prizes be awarded?

A.) Permutations, because the order of the selected winning tickets does matter.
B.) Combinations, because the order of the selected winning tickets does not matter.

3.) How many different 4 letter user ID's can be formed from the letters D, A, N, Y if no repetition of letters is allowed?

A.) Permutations, because the order of the letters selected does matter.
B.) Combinations, because the order of the letters selected does not matter.

4.) Seven of a sample of 150 computers will be selected and tested. How many ways are there to make this selection?

A.) Permutations, because the order of the computers selected does matter.
B.) Combinations, because the order of the computers selected does not matter.