Name_____   Period _____
Algebra 2   Circle: AC   or   BD

Long-term Assignment #1   *Due*_____
22 Points

1) Suppose you roll a die and then roll it again. The die has the shape of a regular tetrahedron (4 sides) and the numbers 1, 2, 3, and 4 on it.

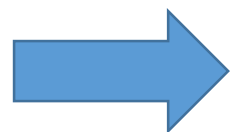   a.   Make a chart that shows the sample space of all possible outcomes. (1 point)

    b.   How many possible outcomes are there? Are they equally likely? (2 points)

    c.   What is the probability that the sum is at most 7? (2 points)

2) Use your work from #1 and the appropriate form of the Addition Rule to answer these questions about a roll of two tetrahedral dice. **Show work or explain your reasoning.**

    a.   What is the probability that you get a sum of 3 or you get a 2 on the first die? (2 points)

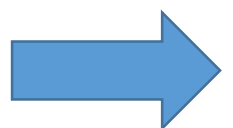   b.   What is the probability you get a difference of 0 or a sum of 6? (2 points)

3) Suppose you roll a tetrahedral die and a six-sided die at the same time.

    a. Make a chart that shows the sample space of all possible outcomes. (1 point)

    b. How many possible outcomes are there? Are they equally likely? (1 point)

    c. What is the probability that the sum is at most 3? *Show work or explain your reasoning.* (2 points)
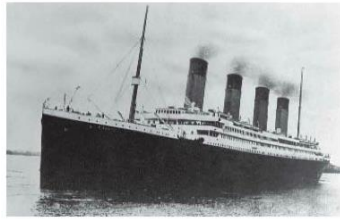
Long-term Assignment #1   *Due*_____

4) The Titanic was a British luxury ship that sank on its first voyage in 1912. It was en route from Southampton, England to New York City. The table below gives some information about the passengers on the Titanic.

Passengers Aboard the Titanic			
	Men	Women and Children	Total
Survived	138	354	492
Died	678	154	832
Total	816	508	1,324

Source: www.titanicinquiry.org/USInq/USReport/AmInqRep03.html#a8

  a. Suppose a passenger is selected at random. Use the table above to find the probability of each of the following events. (1 point each)
       i.   The passenger is a man.

       ii. The passenger survived.

       iii. The passenger is a man and survived.

  b. Now use your results from Part a and the appropriate form of the Addition Rule to find the probability that a randomly selected passenger is a man or a survivor. Check your answer by adding the appropriate entries in the table. (2 points)

Long-term Assignment #1   ***Due***_____

     c.   Suppose a passenger is selected at random. Find the probability of each of the following events. (1 point each)

         i.   The passenger is a woman/child.

         ii.   The passenger died.

         iii.   The passenger is a woman/child and died.

         iv.   The passenger is a woman/child or died.