**PRACTICE PROBLEMS:**

**1.** Which pair has equally likely outcomes? List the letters of the two choices below which have equal probabilities of success, separated by a comma. A standard deck of cards has 12 face cards and four Aces (Aces are not face cards).

A. rolling a sum of 11 on two fair six sided dice
B. drawing a red nine out of a standard 52 card deck given it’s not a face card or an Ace.
C. rolling a sum of 10 on two fair six sided dice
D. rolling a sum of 7 on two fair six sided dice
E. drawing a six out of a standard 52 card deck given it’s not a face card or an Ace.

**2.** A mini license plate for a toy car must consist of two numbers followed by a letter.  Each number must be a 7, 8 or 9. Each letter must be a C, A or R. Repetition of digits is NOT permitted.

* Use the counting principle to determine the number of points in the sample space.
* Construct a tree diagram to represent this situation.
* List the sample space.
* Determine the exact probability of creating a mini license plate with an R. Give solution exactly in reduced fraction form

**3.** A disc jockey has 11 songs to play. Seven are slow songs, and four are fast songs.  Each song is to be played only once.  In how many ways can the disc jockey play the 11 songs if

* The songs can be played in any order.
* The first song must be a slow song and the last song must be a slow song.
* The first two songs must be fast songs.

**4.** Consider the Venn diagram below.  The numbers in the regions of the circle indicate the number of items that belong to that region.



Determine

* n(A)
* n(B)
* P(A)
* P(B)
* P(A|B)

**5.** An identification code is to consist of three letters followed by four digits. How many different codes are possible if repetition is permitted?