

## Probability Examples - Counting

1. In my library of songs on iTunes, I have 49 songs from Shania Twain out of a total of 1,821 songs. I own an iPod Shuffle that can hold around 250 songs. If I randomly select songs from my library to load onto my iPod Shuffle, what is the probability that 8 songs from Shania Twain will be selected? What is the probability 10 songs from Shania Twain will be selected? What about 20 songs?
2. Assume a lottery game has 54 balls, numbered 1-54, in one large bin. If 6 balls are drawn from the bin, calculate the probability of
  - (a) winning the grand prize - matching all 6 numbers.
  - (b) Matching exactly 5 out of the 6 numbers.
  - (c) Matching exactly 4 out of the 6 numbers.
3. In 5 card poker, 5 cards out of a deck of 52 cards are dealt to the player. Find the probability that the player obtains exactly
  - (a) a flush (all cards of the same suit)?
  - (b) four of a kind?
  - (c) a full house?
  - (d) two pair?
  - (e) one pair?