1. For each of the following situations, the standard values for cards assume aces are worth 1, jacks 11, queens 12 and kings 13. All other cards have their number as their value. After drawing a card, it is replaced in the deck and the deck is shuffled.

   (a) Assume all cards have their standard value. What is the expected value of drawing one card? What is the variance?
   (b) Assume all cards have their standard value. What is the expected value and variance for drawing five cards?
   (c) Assume all red cards are worth two times their standard value and black cards are standard. What is the expected value and variance for drawing one card?
   (d) Assume all red cards are worth two times their standard value and black cards are standard. What is the expected value and variance for drawing five cards?

2. Assume we are drawing 5 cards from a deck. After drawing each card, we put the card back in the deck and shuffle.

   (a) What is the expected number of spades drawn?
   (b) What is the expected number of even cards drawn? (ignore face cards)
   (c) What is the expected number of hearts or spades drawn?
   (d) What is the expected number of red face cards drawn?

3. A program draws cards from a virtual deck (without replacement). If the card is red, the program adds the standard value of the card to the total. If the card is black, the program prints the total and quits. What is the average number of additions performed by the program?