3. & 4. How many 13 card bride hands are there?
   A. With 5 spades, 3 diamonds, 4 hearts and 1 club?
   B. With 3 four of a kinds?
   C. With 4 of one suit and 3 of each of the other suits?
   D. With at least one spade?
   E. With exactly two suits?

5. & 6. How many ways are there of giving 20 books into 6 children,
   A. If the books are identical?
   B. If the books are identical and each child gets at least 2 books?
   C. If the books are distinct?
   D. If the books are distinct and each child gets 3 or 4 books?
   E. If the books are distinct and each child gets at least 3 books?

8. Use Inclusion-Exclusion for part A&B. [Hint : define the sets $A_i$ so as to count the intersection of the complements of $A_i$.]

A&B. Being a small state Rhode Island decides to use only the digits 1, 2, 3, 4, and 5 on its license plates. (They felt the zero too embarrassing and the larger numbers just got laughed at.) However, being a populous state, they then required 9 digits on each license plate. Count the number of Rhode Island license plates which have at least one of each of the numbers 1-5.

C. Compute the probability that the above event occurs.