1. You pull out one randomly taken card from a standard deck of cards. Find the probability that the card is not a Queen. Use formula: P(not A) = 1 – P(A) Standard deck of cards has 4 Queens out of total 52 cards. Simplify fraction
2. Box has 10 M&M candies: 5 red and 5 blue. Two candies are taken from this box. Find the probability that the first randomly taken candy will be red and second will be red again. Taken candy doesn't go back to the box. Simplify fraction. Use formula: P(A and B) = P(A)×P(B)
3. One card is drawn from a well-shuffled standard 52-card deck of playing cards. Find the probability that the card is a King OR the card is red. Half of 52 cards are red, half - black. Out of 4 Kings 2 are red (hearts, diamonds) and 2 are black (spades, clubs). Use Rule: P(A or B) = P(A) + P(B) - P(A and B) Simplify final fraction.
4. Company has three departments: Office, Sales and Production.  
   Table below shows how many people work in each department by gender. Based on this table find probability that randomly selected person in this company works in production.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Office | Sales | Production |
| Male | 4 | 6 | 13 |
| Female | 8 | 2 | 7 |

1. Company has three departments: Office, Sales and Production. Table below shows how many people work in each department by gender. Based on this table find probability that randomly selected person in this company is Male AND works in Sales department.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Office | Sales | Production |
| Male | 4 | 6 | 13 |
| Female | 8 | 2 | 7 |

1. Company has three departments: Office, Sales and Production. Table below shows how many people work in each department by gender. Based on this table find probability that randomly selected person in this company is Female OR works in the Office department.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Office | Sales | Production |
| Male | 4 | 6 | 13 |
| Female | 8 | 2 | 7 |

1. Company has three departments: Office, Sales and Production. Table below shows how many people work in each department by gender. Based on this table find probability that randomly selected person in this company works in Sales department IF person is Female.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Office | Sales | Production |
| Male | 4 | 6 | 13 |
| Female | 8 | 2 | 7 |

1. Part 1.

Probability P(A or B), P(A and B)  
 There are M&M candies in a jar: red, blue and yellow.  
 Assign your numbers of candies for each color.  
 Use your numbers to calculate  
  a) probability that randomly taken one candy is blue or red: P (Blue or Red)  
  b) probability that out of 2 candies randomly taken from the jar   
  first candy will be Blue and second candy will be Red: P(Blue and then Red).   
  Keep in mind that in case b) after you take the first candy there are one less candies left in the box.

Part 2.

Counting Outcomes (Permutations and Combinations)

Assign two numbers: N and X (X is portion of N).

Calculate in how many ways can you select X people out of N candidates.

Consider two cases:

a) for the same position (order of selection doesn't matter - use Combinations)

b) for different positions (order of selection makes a difference - use Permutations)