**Problem Statement 1:**

**A test is conducted which is consisting of 20 MCQs (multiple choices questions) with every MCQ having its four options out of which only one is correct. Determine the probability that a person undertaking that test has answered exactly 5 questions wrong.**

**Solution 1:** Let X be the random variable representing number of questions answered wrong in a given MCQs test

, therefore the probability is given by

**Problem Statement 2:**

**A die marked A to E is rolled 50 times. Find the probability of getting a “D” exactly 5 times.**

**Solution 2:** Let X be the random variable representing number of questions answered wrong in a given MCQs test

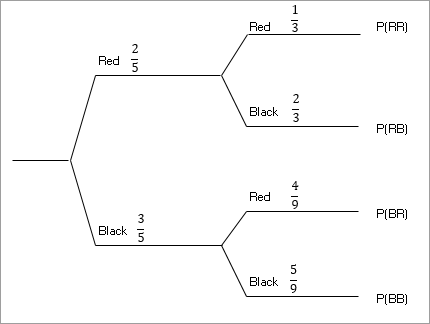
, therefore since n is large, the distribution is approximated to the normal distribution, (*with continuity correction*)

**Problem Statement 3:**

**Two balls are drawn at random in succession without replacement from an urn containing 4 red balls and 6 black balls. Find the probabilities of all the possible outcomes.**

**Solution 3:**

These are independent events, below is a tree diagram to represent the scenario



**Outcome 1:**

**Outcome 2:**

**Outcome 3:**

**Outcome 4:**