

1. Find the first two terms of the sequence for which  $S_n$  is given below:  
 $S_n = n^2(n + 1)$ .
2. Find the value of discriminant ( $\Delta$ ) for the quadratic equation:  
 $x^2 + 7x + 6 = 0$ .
3. Write the equation of X-axis. Hence, find the point of intersection of the graph of the equation  $x + y = 5$  with the X-axis.
4. For a certain frequency distribution, the values of Assumed mean ( $A$ ) = 1300,  $\sum f_i d_i = 900$  and  $\sum f_i = 100$ . Find the value of mean ( $\bar{x}$ ).
5. Two coins are tossed simultaneously. Write the sample space ( $S$ ),  $n(S)$ , the following event  $A$  using set notation and  $n(A)$ , where 'A is the event of getting at least one head.'
6. Find the value of  $k$  for which the given simultaneous equations have infinitely many solutions:  $kx + 4y = 10$ ;  $3x + 2y = 5$ .
7. How many three digit natural numbers are divisible by 5?
8. Solve the following quadratic equation by factorization method:  
 $3x^2 - 29x + 40 = 0$ .
9. Solve the following simultaneous equations by using Cramer's rule:  
 $3x - y = 7$ ;  
 $x + 4y = 11$ .
10. Two dice are thrown. Find the probability of the event that the product of numbers on their upper faces is 12.
11. If the cost of bananas is increased by 10 per dozen, one can get 3 dozen less for 600. Find the original cost of one dozen of bananas.