Arithmetic Progressions : Worksheet -8

1. Show that $a_1, a_2, \ldots, a_n, \ldots$ form an AP where an is defined as below: (i) $a_n = 3 + 4n$ (ii) $a_n = 9 - 5n$. Also find the sum of the first 15 terms in each case.

2. Find the sum of the first 40 positive integers divisible by 6.

3. A contract on construction job specifies a penalty for delay of completion beyond a certain date as follows: 200 for the first day, `250 for the second day, 300 for the third day, etc., the penalty for each succeeding day being ` 50 more than for the preceding day. How much money the contractor has to pay as penalty, if he has delayed the work by 30 days?

4. A sum of 700 is to be used to give seven cash prizes to students of a school for their overall academic performance. If each prize is ` 20 less than its preceding prize, find the value of each of the prizes.

5. In a school, students thought of planting trees in and around the school to reduce air pollution. It was decided that the number of trees, that each section of each class will plant, will be the same as the class, in which they are studying, e.g., a section of Class I will plant 1 tree, a section of Class II will plant 2 trees and so on till Class XII. There are three sections of each class. How many trees will be planted by the students?