**Ans the following with explanation:-**

1. How many different ways 20 people can be divided into 4 identical groups?
2. How many different ways 20 people can be divided into 4 distinct groups?
3. How many different ways 20 people can be divided into 4 identical groups where ordering of people inside each groups matters (i.e. 1234 is not same as 4231)?
4. How many different ways 20 people can be divided into 4 distinct groups where ordering of people inside each groups matters (i.e. 1234 is not same as 4231)?
5. How many different ways 20 people can be divided equally into 4 identical groups?
6. How many different ways 20 people can be divided equally into 4 distinct groups?
7. How many different ways 20 people can be divided equally into 4 identical groups where ordering of people inside each groups matters (i.e. 1234 is not same as 4231)?
8. How many different ways 20 people can be divided equally into 4 distinct groups where ordering of people inside each groups matters (i.e. 1234 is not same as 4231)?

Find total number of non-negative integer solutions of these equations:-

1. x1+x2+x3+x4+x5=26.
2. x1+x2+x3+x4=98. Here all these variables are odd integers.
3. x1+x2+x3+x4=96. Only x1,x2 are odd integers.
4. x1+x2+x3+x4=100. Exactly 2 variables are odd integers.
5. x1+x2+x3+x4+x5=109. Maximum 4 variables are odd integers.
6. x1+x2+x3+x4+x5=71. x1>2,x2>3.
7. x1+x2+x3=79. x1 is odd where x1>=3.
8. x1+x2+x3=72. 2<x1<20, 3<=x2<=30, x3<=40.
9. x1+x2+x3=69. x1<20.
10. How many non-decreasing sequences of 7 decimal digits are there?