**Question**

Three girls and four boys are to sit in a row of seven chairs. How many different arrangements are possible

1. If the girls sit beside one another?
2. If no two boys may sit beside each other?

**Solution**

(i)

3 girls 4 boys

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Girl** | **Girl** | **Girl** |  |  |

5! X 3! = 5.4.3.2.1.3.2.1 = 720

(ii)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Boy** | **Girl** | **Boy** | **Girl** | **Boy** | **Girl** | **Boy** |

We can arrange the boys in 4! Ways and the girls in 3! Ways hence the total number of arrangements is 4! X 3! = 4.3.2.1.3.2.1 = 144