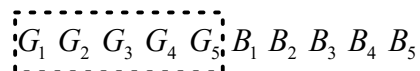


Let  $n$  be the number of ways in which 5 boys and 5 girls can stand in a queue in such a way that all the girls stand consecutively in the queue. Let  $m$  be the number of ways in which 5 boys and 5 girls can stand in a queue in such a way that exactly four girls stand consecutively in the queue. Then the value of  $\frac{m}{n}$  is

**Solution**

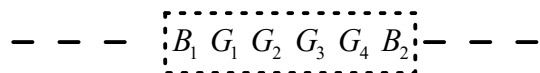
*n Calculation*



$$n = 6! \times 5!$$

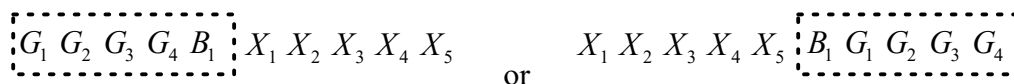
*m Calculation*

Case I: 4 Girls have at least 1 boy next to them on either side



$$\text{No. of ways} = 5! \times 4! \times 2! \times {}^5C_4 \times {}^5C_2$$

Case II: 4 Girls have only one boy next to them or 4 girls are together on one end of the queue



$$\text{No. of ways} = (5! \times 4! \times {}^5C_4 \times {}^5C_1) \times 2$$

$$\therefore \frac{m}{n} = \frac{5! \times 4! \times 2! \times {}^5C_4 \times {}^5C_2 + 5! \times 4! \times {}^5C_4 \times {}^5C_1 \times 2}{6! \times 5!} = 5$$