Answer on Question #42960 – Math – Discrete Mathematics

If we have 100 people (80 male and 20 female) and we need to choose a committee. The committee must contain exactly 2 females, then how many different 5 person committees are possible?

Solution:

If the 5 person committees contains exactly 2 females then the remaining three are males.

Number of ways to choose 2 females from 20 is $\binom{20}{2} = 190$

3 makes can be chosen from 80 in $\binom{80}{3}$ ways. $\binom{80}{3} = 82160$

$190 \cdot 82160 = 15610400$

Therefore, there are 15610400 ways to form the 5 person committees.