A team of five players is chosen from six males and 5 females.

a. Determine how many different teams can be formed.
b. Determine how many different teams can be formed consisting of 3 males and 2 females.
c. Determine how many different teams can be formed if the team consists of more females than males

a.

There are 11 players altogether to form a team of 5 players.

Since order is not important, we use **combinations**

Choose 5 objects from 11

$$= \binom{11}{5} = 462$$

b.

Choose 3 males from 6 AND choose 2 females from 5

$$= \binom{6}{3} \times \binom{5}{2} = 20 \times 10 = 200$$

c.

The team of 5 needs to contain more females than males.

It could have:

3 females and 2 males

Or

4 females and 1 male

Or

5 females and 0 males

Choose 3 females from 5 AND 2 males from 6

Or

Choose 4 females from 5 AND 1 male from 6

Or

Choose 5 females from 5 AND 0 male from 6

$$= \binom{5}{3} \times \binom{6}{2} + \binom{5}{4} \times \binom{6}{1} + \binom{5}{5} \times \binom{6}{0}$$
$$= 10 \times 15 + 5 \times 6 + 1 \times 1$$
$$= 150 + 30 + 1$$
$$= 181$$