Module 5 WIKI:

**Or** means more than one thing: You add all the boxes in those categories.

**And** means “both” what is in common

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>10</td>
<td>5</td>
<td>9</td>
<td>24</td>
</tr>
<tr>
<td>F</td>
<td>12</td>
<td>6</td>
<td>17</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>11</td>
<td>26</td>
<td>59</td>
</tr>
</tbody>
</table>

\[ P(\text{A or M}) = \frac{10+5+9+12}{59} \]

\[ P(\text{A and M}) = \frac{10}{59} \]

The denominator of the fraction is “the given fact” or What we know for sure. When there is no given we use the whole population.

What is the probability of a male getting a B? 5/24

When we are picking a sample from a larger group:

Permutation is when things are in a specific order:

\[ nPr = \frac{n!}{(n-r)!} \]

Combination is when things don’t have to be in a specific order.

\[ nCr = \frac{n!}{(n-r)!r!} \]
Otherwise to find the number of ways things can be done, we multiply the number of different options we have for each choice we need to make.