## If $P(A)=0.65$ and $P(B)=0.35$ and $P(A \cap B)=0.1$ what is the $P(B \mid A)$

A good way to UNDERSTAND notation like this is as follows...
Firstly give them realistic names...
Out of 100 people:
65 people do Art
$\mathrm{P}(\mathrm{A})=0.65$
35 people do Biology
$\mathrm{P}(\mathrm{B})=0.35$
10 people do both
$\mathrm{P}(\mathrm{A} \cap \mathrm{B})=0.10$
So also 10 do neither.

$\mathbf{P}(\mathbf{B} \mid \mathbf{A})$ means "How many people do Biology out of those that do Art"
65 people do Art and 10 of them also do Biology
The fraction is $\frac{10}{65}=\frac{2}{13}$

It is better not to just try to remember formulas. You just stop thinking if you do!

