DeMorgan's Second Law, Specific Example
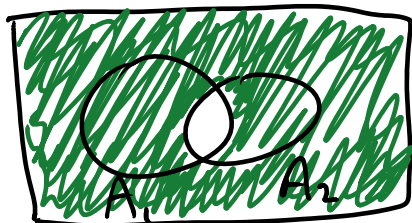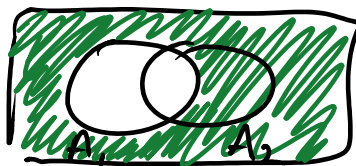
$$(A_1 \cap A_2)^c = A_1^c \cup A_2^c$$
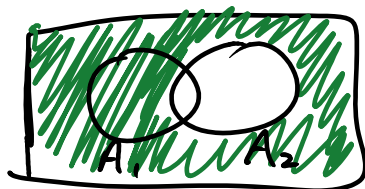

$(A_1 \cap A_2)^c$

A_1^c

EITHER/OR i.e. union $\cup$

A_2^c

General Statement of DeMorgan's Second Law

$$\left(\bigcap_j A_j \right)^c = \bigcup_j A_j^c$$

An outcome is in $\left(\bigcap_j A_j \right)^c$ if (and only if) it is not in $\bigcap_j A_j$ i.e if (and only if) it is missing from at least one of the A_j's. Equivalently if it is in at least one of A_j^c's i.e. in $\bigcup_j A_j^c$.