

IG- Day 8

Simple statements - p: The sun is shining.
 q: We will go outside.

Conditional statement: If the sun is shining, then we will go outside.

Written symbolically: $p \rightarrow q$

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Inverse- formed by negating both the hypothesis and conclusion

Written example : If the sun is **not** shining, then we will **not** go outside

Symbolic example: $\sim p \rightarrow \sim q$

Converse- formed by switching the hypothesis and conclusion

Written example : If we go outside, then the sun is shining.

Symbolic example: $q \rightarrow p$

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Contrapositive- formed by performing both the inverse and converse to a conditional statement

Written example : If we do not go outside, then the sun is not shining.

Symbolic example: $\sim q \rightarrow \sim p$

Truth Table

p	q	$\sim p$	$\sim q$	$p \rightarrow q$	$\sim p \rightarrow \sim q$	$q \rightarrow p$	$\sim p \rightarrow \sim q$
T	T	F	F	T	T	T	T
T	F	F	T	F	T	T	F
F	T	T	F	T	F	F	T
F	F	T	T	T	T	T	T