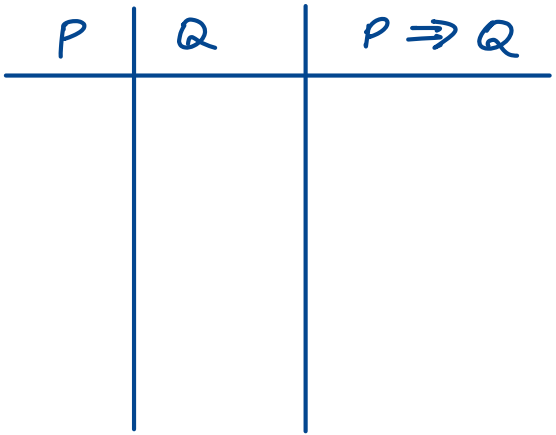
P	Q	$P \wedge Q$	$P \vee Q$	$\neg P \vee Q$


P
Q
P ⇒ Q

P	Q	$\neg P$	$\neg Q$	$P \Rightarrow Q$	Converse $Q \Rightarrow P$	Inverse $\neg P \Rightarrow \neg Q$	Contrapositive $\neg Q \Rightarrow \neg P$

$P \Rightarrow Q \equiv$

P	Q	$P \Rightarrow Q$	$\neg Q \Rightarrow \neg P$	

P	Q	$P \wedge Q$	$\neg(P \wedge Q)$	$\neg P \vee \neg Q$

$\neg(P \wedge Q) \equiv$

$\neg(P \vee Q) \equiv$

for all natural numbers n, $n^2 + n + 41$ is prime

From Note 0:

$\mathbb{N}$ =

$\mathbb{Z}$ =

$\mathbb{Z}^+$ =

$\mathbb{Q}$ =

$\mathbb{R}$ =

$S = \{\heartsuit, \triangle, \square\}$

$\forall$

$\exists$

Practice "Every nonzero rational number can be multiplied by some rational number to get 1"

$$\exists x \, \exists y \; P(x,y) \overset{?}{\equiv} \exists y \, \exists x \; P(x,y)$$

$$\forall x \, \exists y \; P(x,y) \overset{?}{\equiv} \exists x \, \forall y \; P(x,y)$$

$$\neg(\forall x \in S)\, P(x) \quad \equiv$$

Example:

$P(x)$ $x^2 > 10$

$S = \{1, 2, 3, 4\}$