

Valid Arguments

p	q	$p \oplus q$ ← exclusive OR
T	T	F
T	F	T
F	T	T
F	F	F

Sep 3-9:58 AM

valid:
if all premises are true then conclusion

$P \rightarrow q$

P	q	$P \rightarrow q$
T	T	T
T	F	F
F	T	T
F	F	T

Sep 3-10:06 AM

p	q	r	$p \rightarrow q$	$r \rightarrow q$	$p \rightarrow r$
T	T	T	T	T	T
T	T	F	T	F	F
T	F	T	F	T	F
T	F	F	F	T	F
F	T	T	T	T	T
F	T	F	T	T	T
F	F	T	T	T	T
F	F	F	T	T	T

Sep 3-10:11 AM

Modus Ponens

$p \rightarrow q$
 p
∴ q

Modus Tollens

$p \rightarrow q$
 $\neg q$
∴ $\neg p$

$\equiv \neg q \rightarrow \neg p$

Sep 3-10:17 AM

p	q	r	$p \rightarrow q$	$q \rightarrow r$	$p \rightarrow r$
T	T	T	T	T	T
T	T	F	T	F	F
T	F	T	F	T	F
T	F	F	F	T	F
F	T	T	T	T	T
F	T	F	T	T	T
F	F	T	T	T	T
F	F	F	T	T	T

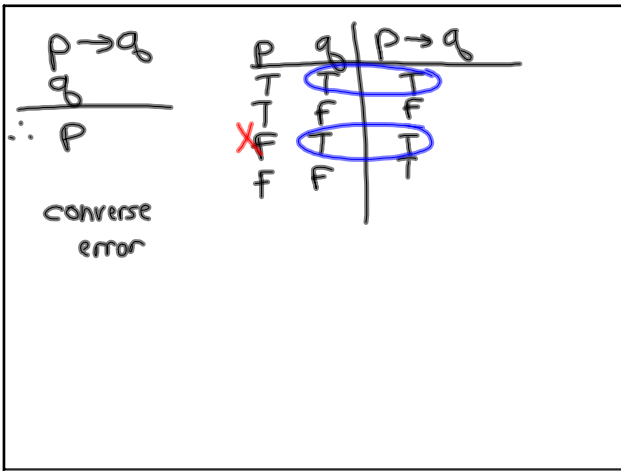
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p: x is positive
q: x is negative
r: $x^2 > 0$

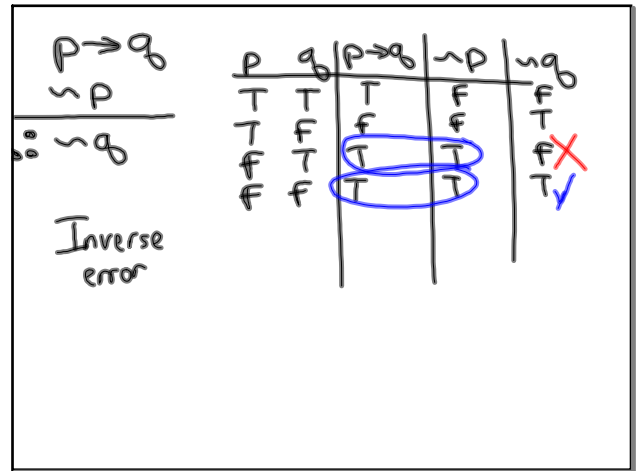
Division into cases

$p \vee q$
 $p \rightarrow r$
 $q \rightarrow r$
∴ r

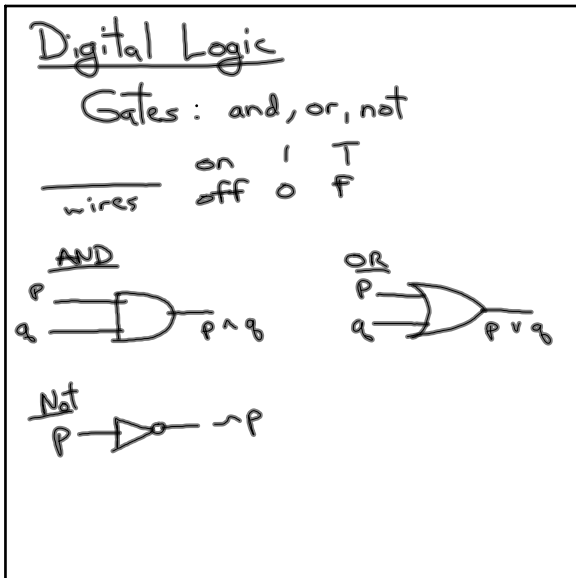
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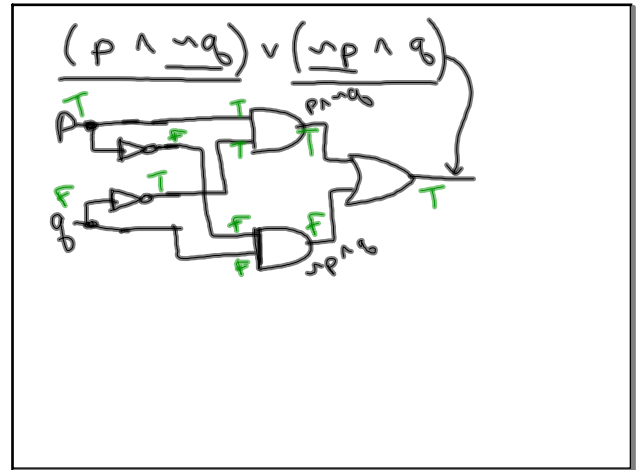
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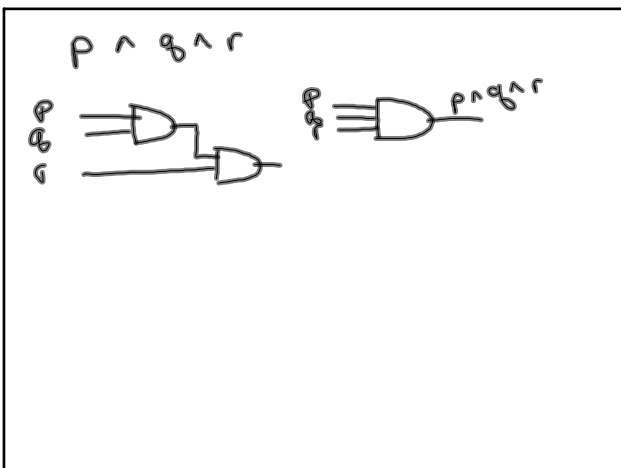
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