only concepts and formula's covered

Mathematical Reasoning

(*) p: 5 is a irrational number
q: 6 is an odd number.
→ This are simple statements

} Both are false,
But, human will not care about T/F in this chop 😊

p: 5 is a prime number and is a rational number
→ p is here compound statement

(*) Negation
p: $\sqrt{2}$ is a irrational number
$\sim p$: $\sqrt{2}$ is not a irrational number

(*) Converse and contrapositive

(a) if then, $p \Rightarrow q$

(b) if and only if,
$p \Leftrightarrow q$

(*) Converse → $p \to q$
Conv is − $q \to p$
if q then p

(*) Contrapositive
$p \to q$
$\Rightarrow (\sim q) \to (\sim p)$ if not q, then not p.

(*) '$\cup$' → union → '$\vee$'
'$\cap$' → intersection → '$\wedge$'

Remember/ Learn

(*) $p \to q$
$= (\sim p \vee q)$

(*) $p \leftrightarrow q$
$= (p \to q) \wedge (q \to p)$

(*) Fallacy → means always contradicting E.g $(\sim p \wedge p)$ → Fallacy
Tautology → means always True E.g $(\sim p \vee p)$ → Tautology