

Law of double negation:	$\neg\neg P$	LEQV	P
De Morgan's laws:	$\neg(P \wedge Q)$	LEQV	$\neg P \vee \neg Q$
	$\neg(P \vee Q)$	LEQV	$\neg P \wedge \neg Q$
Commutative laws:	$P \wedge Q$	LEQV	$Q \wedge P$
	$P \vee Q$	LEQV	$Q \vee P$
Associative laws:	$P \wedge (Q \wedge R)$	LEQV	$(P \wedge Q) \wedge R$
	$P \vee (Q \vee R)$	LEQV	$(P \vee Q) \vee R$
Distributive laws:	$P \wedge (Q \vee R)$	LEQV	$(P \wedge Q) \vee (P \wedge R)$
	$P \vee (Q \wedge R)$	LEQV	$(P \vee Q) \wedge (P \vee R)$
Identity laws:	$P \wedge (Q \vee \neg Q)$	LEQV	P
	$P \vee (Q \wedge \neg Q)$	LEQV	P
Idempotency laws:	$P \wedge P$	LEQV	P
	$P \vee P$	LEQV	P
\rightarrow law:	$P \rightarrow Q$	LEQV	$\neg P \vee Q$
\leftrightarrow law:	$P \leftrightarrow Q$	LEQV	$P \wedge Q \vee \neg P \wedge \neg Q$

Duality of quantifiers:

$$\text{I. } \neg \mathbf{Q}x \, F \text{ LEQV } \overline{\mathbf{Q}}x \, \neg F$$

Factoring quantifiers:

- IIa. $E \wedge \mathbf{Q}x \, F \text{ LEQV } \mathbf{Q}x \, (E \wedge F)$, if x is not free in E
- IIb. $E \vee \mathbf{Q}x \, F \text{ LEQV } \mathbf{Q}x \, (E \vee F)$, if x is not free in E
- IIc. $\mathbf{Q}x \, E \wedge F \text{ LEQV } \mathbf{Q}x \, (E \wedge F)$, if x is not free in F
- IId. $\mathbf{Q}x \, E \vee F \text{ LEQV } \mathbf{Q}x \, (E \vee F)$, if x is not free in F
- IIe. $\mathbf{Q}x \, E \rightarrow F \text{ LEQV } \overline{\mathbf{Q}}x \, (E \rightarrow F)$, if x is not free in F
- IIIf. $E \rightarrow \mathbf{Q}x \, F \text{ LEQV } \mathbf{Q}x \, (E \rightarrow F)$, if x is not free in E

Renaming of quantified variables:

$$\text{III. } \mathbf{Q}x \, F \text{ LEQV } \mathbf{Q}y \, F_y^x, \text{ if } y \text{ does not occur in } F$$