# Propiedades básicas de las fórmulas

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|---|---|
| $\varphi \to \psi \equiv (\neg\, \varphi) \vee \psi$ | $\varphi \to \psi \equiv (\neg\, \psi) \to (\neg\, \varphi)$ |
| $\varphi \leftrightarrow \psi \equiv (\varphi \to \psi) \wedge (\psi \to \varphi)$ | $\neg\, (\neg\, \varphi) \equiv \varphi$ |
| $\varphi \wedge (\psi \wedge \eta) \equiv (\varphi \wedge \psi) \wedge \eta$ | $\varphi \vee (\psi \vee \eta) \equiv (\varphi \vee \psi) \vee \eta$ |
| $\varphi \wedge \psi \equiv \psi \wedge \varphi$ | $\varphi \vee \psi \equiv \psi \vee \varphi$ |
| $\varphi \wedge (\psi \vee \eta) \equiv (\varphi \wedge \psi) \vee (\varphi \wedge \eta)$ | $\varphi \vee (\psi \wedge \eta) \equiv (\varphi \vee \psi) \wedge (\varphi \wedge \eta)$ |
| $\varphi \wedge \varphi \equiv \varphi$ | $\varphi \vee \varphi \equiv \varphi$ |
| $\neg\, (\varphi \wedge \psi) \equiv (\neg\, \varphi) \vee (\neg\, \psi)$ | $\neg\, (\varphi \vee \psi) \equiv (\neg\, \varphi) \wedge (\neg\, \psi)$ |
| $\varphi \wedge (\psi \vee \varphi) \equiv \varphi$ | $\varphi \vee (\psi \wedge \varphi) \equiv \varphi$ |
| $\neg\, (\forall x \varphi(x)) \equiv \exists x(\neg\, \varphi(x))$ | $\neg\, (\exists x \varphi(x)) \equiv \forall x(\neg\, \varphi(x))$ |
| $\forall x(\varphi(x) \wedge \psi(x)) \equiv \forall x \varphi(x) \wedge \forall x \psi(x)$ | $\exists x(\varphi(x) \vee \psi(x)) \equiv \exists x \varphi(x) \vee \exists x \psi(x)$ |
| $(\forall x \varphi(x) \vee \forall x \psi(x)) \to \forall x(\varphi(x) \vee \psi(x))$ | $\forall x(\varphi(x) \vee \psi(x)) \not\to (\forall x \varphi(x) \vee \forall x \psi(x))$ |
| $\exists x(\varphi(x) \wedge \psi(x)) \to (\exists x \varphi(x) \wedge \exists x \psi(x))$ | $(\exists x \varphi(x) \wedge \exists x \psi(x)) \not\to \exists x(\varphi(x) \wedge \psi(x))$ |