



$$a \rightarrow b$$

$$\equiv (a \wedge b) \vee (\neg a \wedge b) \vee (\neg a \wedge \neg b)$$

$$a \rightarrow b$$

$$\neg a \vee b$$

defn

$$\neg(\neg a \vee b)$$

d.n.

$$\neg(\neg\neg a \wedge \neg b)$$

DM

$$\neg(a \wedge \neg b)$$

d.n.

↓ DM

(can
DEM
dis
iden
dn

$$(a \wedge b) \vee (\neg a \wedge b) \vee \neg(a \vee b)$$

$$((a \wedge b) \vee \neg a) \wedge ((a \wedge b) \vee b) \vee (\neg a \wedge \neg b)$$

$$\begin{array}{c} \boxed{(a \vee \neg a) \wedge (b \vee \neg a)} \\ \downarrow \\ T \end{array}$$

$$\begin{array}{c} (a \vee b) \wedge (b \vee b) \\ \downarrow \\ b \end{array}$$

$$((b \vee \neg a) \wedge (a \vee b) \wedge b) \vee (\neg a \wedge \neg b)$$