

ATIVIDADES DA QUINTA LISTA

(A) $\neg(P \wedge Q \wedge R) \leftrightarrow \neg P \vee \neg Q \vee \neg R$

			X1	X2	X3	X4
P	Q	R	$\neg(P \wedge Q \wedge R)$	$\neg P \vee \neg Q \vee \neg R$	$\neg(P \vee Q \vee R)$	$\neg(Q \vee R)$
V	V	V	F	F	F	F
V	V	F	V	F	V	F
V	F	V	V	F	V	F
V	F	F	V	F	V	F
F	V	V	V	F	V	F
F	V	F	V	F	V	F
F	F	V	V	F	V	F
F	F	F	V	F	V	F

$\neg X1$	$\neg X2$	X3	X4	X3	X4
V	F	V	V	$\neg P \vee \neg Q$	$\neg Q \vee \neg R$
V	V	V	V	F	F
V	V	V	V	F	F
V	V	V	V	V	V
V	V	V	V	V	V
V	V	V	V	V	F
V	V	V	V	V	V
V	F	V	V	V	V
V	F	V	V	F	V

QUINTA VISTA DE EXERCÍCIOS

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$\sim p$	q	r	$\sim p$	$\sim q$	$\sim r$	$\sim p \vee q$	$\sim q \vee r$	$\sim p \wedge q$	$\sim q \wedge \sim r$
V	V	V	F	F	F	F	F	F	F
V	V	F	F	F	V	F	F	F	F
V	F	V	F	V	F	F	F	F	F
V	F	F	F	V	V	F	V	F	V
F	V	V	V	F	F	F	F	F	F
F	V	F	V	F	V	F	F	F	F
F	F	V	V	V	F	F	F	V	F
F	F	F	V	V	V	V	V	X	V

timbra

② Quinta Lista de Atividades

① $(P \wedge Q) \wedge R \Leftrightarrow NP \vee \neg Q \vee NR$

$\neg Q \vee NR \Leftrightarrow NP \wedge \neg Q \vee NR \Leftrightarrow NP \vee \neg Q \vee NR$

② ~~$(P \vee Q) \vee R \Leftrightarrow \neg P \wedge \neg Q \wedge \neg R$~~
 $\neg(P \vee Q) \vee R \Leftrightarrow \neg(P \vee Q) \vee R$

$\neg(P \vee Q) \wedge \neg R \Leftrightarrow \neg P \wedge \neg Q \wedge \neg R$

③ ①

P	Q	R	$Q \vee R$	$P \rightarrow Q$	$P \rightarrow R$	$P \rightarrow (Q \wedge R)$	$(P \rightarrow Q) \wedge (P \rightarrow R)$
V	V	V	V	V	V	V	V
V	V	F	F	F	F	F	F
V	F	V	V	F	V	F	F
V	F	F	F	F	F	F	F
F	V	V	V	V	V	V	V
F	V	F	F	V	F	F	F
F	F	V	V	V	V	V	V
F	F	F	F	V	V	V	V

③ ②

P	Q	R	$Q \vee R$	$P \rightarrow Q$	$P \rightarrow R$	$P \rightarrow (Q \vee R)$	$(P \rightarrow Q) \vee (P \rightarrow R)$
V	V	V	V	V	V	V	V
V	V	F	F	F	F	F	F
V	F	V	V	F	V	V	V
V	F	F	F	F	F	F	F
F	V	V	V	V	V	V	V
F	V	F	F	V	F	V	V
F	F	V	V	V	V	V	V
F	F	F	F	V	V	V	V

$$\begin{aligned}
 (4) \quad (A) \quad & P \rightarrow (Q \wedge R) \Leftrightarrow (P \rightarrow Q) \wedge (P \rightarrow R) \\
 & (\cancel{\sim P} \vee (Q \wedge R)) \Leftrightarrow (\sim P \vee Q) \wedge (\sim P \vee R) \\
 & (P \rightarrow Q) \wedge (P \rightarrow R)
 \end{aligned}$$

$$\begin{aligned}
 (4) \quad (B) \quad & P \rightarrow (Q \vee R) \Leftrightarrow (P \rightarrow Q) \vee (P \rightarrow R) \\
 & (\cancel{\sim P} \vee (Q \vee R)) \Leftrightarrow (\sim P \vee Q) \vee (\sim P \vee R) \\
 & (P \rightarrow Q) \vee (P \rightarrow R)
 \end{aligned}$$

$$\begin{aligned}
 (5) \quad (A) \quad & \text{I} \quad P \wedge Q \\
 & \text{II} \quad \sim P \wedge \sim Q \quad \text{APLICANDO LEI DE MORGAN } \sim P \vee \sim Q \\
 & \text{III}
 \end{aligned}$$

$$\begin{aligned}
 (B) \quad & \text{I} \quad P \wedge Q \\
 & \text{II} \quad P \wedge \sim Q \\
 & \text{III} \quad \sim P \wedge Q
 \end{aligned}$$

$$\begin{aligned}
 (C) \quad & \text{I} \quad P \vee Q \\
 & \text{II} \quad P \wedge \sim Q \\
 & \text{III} \quad \sim P \vee Q
 \end{aligned}$$