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# Prova I - Logica P/ Computacao

1-b)  $(p \vee \neg q) \rightarrow q$

P	q	$\neg q$	$p \vee \neg q$	$p \vee \neg q \rightarrow q$
1	1	0	1	1
1	0	1	0	0
0	1	0	0	1
0	0	1	1	1

1-a)

$p \vee \neg q \rightarrow q$

$1 \vee 1 \rightarrow 0$

✓

$0 \rightarrow 0 = 0$

Valor Logico 0

1-b

b)  $\neg p \vee (p \wedge \neg q)$

P	Q	$\neg p$	$\neg q$	$p \wedge \neg q$	$\neg p \vee (p \wedge \neg q)$
1	1	0	0	0	0
1	0	0	1	1	1
0	1	1	0	0	1
0	0	1	1	0	1

1-a) b)  $\neg p \vee (p \wedge \neg q)$

$0 \vee (1 \wedge 1)$

$0 \vee 1 = 0$

Valor Logico 1

1-b

c)  $\neg p \wedge (\neg q \Leftrightarrow q)$

P	Q	$\neg p$	$\neg q$	$\neg q \Leftrightarrow q$	$\neg p \wedge (\neg q \Leftrightarrow q)$
1	1	0	0	0	0
1	0	0	1	0	0
0	1	1	0	0	1
0	0	1	1	0	1

1-a

c)  $\neg p \wedge (\neg q \Leftrightarrow q)$

$0 \wedge (1 \Leftrightarrow 0)$

$0 \wedge 0 = 0$

Valor logico 0



Cristiano Korene

1-a: d)  $\neg(\neg P \wedge Q) \leftrightarrow (P \vee \neg Q)$

$\neg(0 \wedge 0) \leftrightarrow (1 \vee 1)$

$\neg 0 \leftrightarrow \neg 1$

$1 \leftrightarrow \neg 1 = 1$

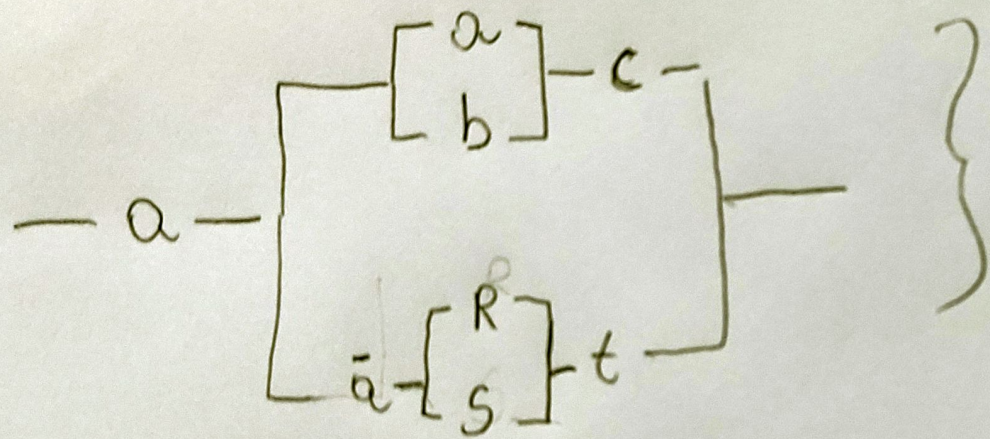
valor logico 1

d)  $\neg(\neg P \wedge Q) \leftrightarrow (P \vee \neg Q)$

P	Q	$\neg P$	$\neg Q$	$\neg P \wedge Q$	$\neg(\neg P \wedge Q)$	$P \vee \neg Q$	$\neg(\neg P \wedge Q) \leftrightarrow P \vee \neg Q$
1	1	0	0	0	1	1	1
1	0	0	1	0	1	1	1
0	1	1	0	1	0	1	0
0	0	1	1	0	1	1	1



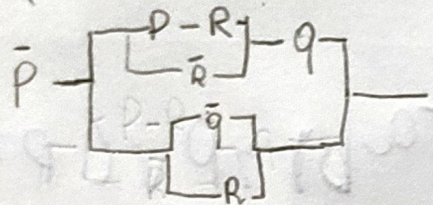
$$2- a[(a+b) \cdot c] + (\bar{a} \cdot ((R+S) \cdot t))]$$



$$a[(a+b) \cdot c] + (\bar{a} \cdot ((R+S) \cdot t))]$$



3 a)  $\bar{P} \cdot (((P \cdot R) + \bar{R}) \cdot Q) + (\bar{Q} + R)$



$\rightarrow \neg P \wedge [((P \wedge R) \vee \neg R) \wedge Q] \vee (\neg Q \vee R)$

b)

						A		B			
P	R	Q	$\neg P$	$\neg R$	$\neg Q$	$P \wedge R$	$(P \wedge R) \vee \neg R$	$((P \wedge R) \vee \neg R) \wedge Q$	$\neg Q \vee R$	$A \vee B$	$\neg P \wedge (A \vee B)$
1	1	1	0	0	0	1	1	1	1	1	0
1	1	0	0	0	1	1	1	0	1	1	0
1	0	1	0	1	0	0	1	1	0	1	0
1	0	0	0	1	1	0	1	0	1	1	0
0	1	1	1	0	0	0	0	0	1	1	1
0	1	0	1	0	1	0	0	0	1	1	1
0	0	1	1	0	0	0	0	0	0	0	0
0	0	0	1	0	1	0	0	0	1	1	1