

IFSC - CÂMPUS SÃO JOSÉ - CST ANÁLISE E DESENVOLVIMENTO DE SISTEMAS  
LÓGICA MATEMÁTICA

TABELA VERDADE - EXERCÍCIOS 2 ' RESOLUÇÃO.

Para as questões seguintes, obter a tabela-verdade para as proposições apresentadas, considerando as proposições simples A, B, C e D.

1)  $(A \vee B) \vee C$

A	B	C	$A \vee B$	$(A \vee B) \vee C$
V	V	V	V	V
V	V	F	V	V
V	F	V	V	V
V	F	F	V	V
F	V	V	V	V
F	V	F	V	V
F	F	V	F	V
F	F	F	F	F

2)  $(A \wedge B) \wedge C$

A	B	C	$A \wedge B$	$(A \wedge B) \wedge C$
V	V	V	V	V
V	V	F	V	F
V	F	V	F	F
V	F	F	F	F
F	V	V	F	F
F	V	F	F	F
F	F	V	F	F
F	F	F	F	F

3)  $(A \wedge B) \vee C$

A	B	C	$A \wedge B$	$(A \wedge B) \vee C$
V	V	V	V	V
V	V	F	V	V
V	F	V	F	V
V	F	F	F	F
F	V	V	F	V
F	V	F	F	F
F	F	V	F	V
F	F	F	F	F

4)  $(A \vee B) \wedge C$

A	B	C	$A \vee B$	$(A \vee B) \wedge C$
V	V	V	V	V
V	V	F	V	F
V	F	V	V	V
V	F	F	V	F
F	V	V	V	V
F	V	F	V	F
F	F	V	F	F
F	F	F	F	F

5)  $(A \wedge C) \vee (B \wedge C)$

A	B	C	$A \wedge C$	$B \wedge C$	$(A \wedge C) \vee (B \wedge C)$
V	V	V	V	V	V
V	V	F	F	F	F
V	F	V	V	F	V
V	F	F	F	F	F
F	V	V	F	V	V
F	V	F	F	F	F
F	F	V	F	F	F
F	F	F	F	F	F

6)  $(A \vee D) \wedge (B \vee C)$

A	B	C	D	$A \vee D$	$B \vee C$	$(A \vee D) \wedge (B \vee C)$
V	V	V	V	✓	✓	✓
V	V	V	F	✓	✓	✓
V	V	F	V	✓	✓	✓
V	V	F	F	✓	✓	✓
V	F	V	V	✓	✓	✓
V	F	V	F	✓	✓	✓
V	F	F	V	✓	F	F
V	F	F	F	✓	F	F
F	V	V	V	✓	✓	✓
F	V	V	F	F	✓	F
F	V	F	V	✓	✓	✓
F	V	F	F	F	✓	F
F	F	V	V	✓	✓	✓
F	F	V	F	F	✓	F
F	F	F	V	✓	F	F
F	F	F	F	F	F	F

7)  $(A \vee B) \rightarrow C$

A	B	C	$A \vee B$	$(A \vee B) \rightarrow C$
V	V	V	✓	✓
V	V	F	✓	F
V	F	V	✓	✓
V	F	F	✓	F
F	V	V	✓	✓
F	V	F	✓	F
F	F	V	F	✓
F	F	F	F	✓

8)  $(A \wedge B) \rightarrow C$

A	B	C	$A \wedge B$	$(A \wedge B) \rightarrow C$
V	V	V	✓	✓
V	V	F	✓	F
V	F	V	F	✓
V	F	F	F	✓
F	V	V	F	✓
F	V	F	F	✓
F	F	V	F	✓
F	F	F	F	✓

9)  $(A \vee B) \leftrightarrow C$

A	B	C	$A \vee B$	$(A \vee B) \leftrightarrow C$
V	V	V	✓	✓
V	V	F	✓	F
V	F	V	✓	✓
V	F	F	✓	F
F	V	V	✓	✓
F	V	F	✓	F
F	F	V	F	F
F	F	F	F	✓

10)  $(A \wedge B) \leftrightarrow C$

A	B	C	$A \wedge B$	$(A \wedge B) \leftrightarrow C$
V	V	V	✓	✓
V	V	F	✓	F
V	F	V	F	F
V	F	F	F	✓
F	V	V	F	F
F	V	F	F	✓
F	F	V	F	F
F	F	F	F	✓

11)  $((A \rightarrow B) \wedge B) \rightarrow A$

A	B	$A \rightarrow B$	$(A \rightarrow B) \wedge B$	$((A \rightarrow B) \wedge B) \rightarrow A$
V	V	✓	✓	✓
V	F	F	F	✓
F	V	✓	✓	F
F	F	✓	F	✓

12)  $((A \rightarrow B) \wedge A) \rightarrow B$

A	B	$A \rightarrow B$	$(A \rightarrow B) \wedge A$	$((A \rightarrow B) \wedge A) \rightarrow B$
V	V	✓	✓	✓
V	F	F	F	✓
F	V	✓	F	✓
F	F	✓	F	✓

13)  $((B \rightarrow A) \wedge B) \rightarrow A$

A	B	$B \rightarrow A$	$(B \rightarrow A) \wedge B$	$((B \rightarrow A) \wedge B) \rightarrow A$
V	V	✓	✓	✓
V	F	✓	F	✓
F	V	F	F	✓
F	F	✓	F	✓

14)  $((B \rightarrow A) \wedge A) \rightarrow B$

A	B	$B \rightarrow A$	$(B \rightarrow A) \wedge A$	$((B \rightarrow A) \wedge A) \rightarrow B$
V	V	✓	✓	✓
V	F	✓	✓	F
F	V	F	F	✓
F	F	✓	F	✓

15)  $((A \vee B) \rightarrow C) \wedge B \rightarrow C$

A	B	C	$A \vee B$	$(A \vee B) \rightarrow C$	$((A \vee B) \rightarrow C) \wedge B$	$((A \vee B) \rightarrow C) \wedge B \rightarrow C$
V	V	V	✓	✓	✓	✓
V	V	F	✓	F	F	✓
V	F	V	✓	✓	F	✓
V	F	F	✓	F	F	✓
F	V	V	✓	✓	✓	✓
F	V	F	✓	F	F	✓
F	F	V	F	✓	F	✓
F	F	F	F	✓	F	✓

16)  $((A \wedge B) \rightarrow C) \wedge B \rightarrow C$

A	B	C	$A \wedge B$	$(A \wedge B) \rightarrow C$	$((A \wedge B) \rightarrow C) \wedge B$	$((A \wedge B) \rightarrow C) \wedge B \rightarrow C$
V	V	V	✓	✓	✓	✓
V	V	F	✓	F	F	✓
V	F	V	F	✓	F	✓
V	F	F	F	✓	F	✓
F	V	V	F	✓	✓	✓
F	V	F	F	✓	✓	⊥
F	F	V	F	✓	F	✓
F	F	F	F	✓	F	✓

17)  $((A \vee B) \rightarrow C) \wedge \sim B \rightarrow C$

A	B	C	$A \vee B$	$(A \vee B) \rightarrow C$	$((A \vee B) \rightarrow C) \wedge \sim B$	$((A \vee B) \rightarrow C) \wedge \sim B \rightarrow C$
V	V	V	✓	✓	F	✓
V	V	F	✓	F	F	✓
V	F	V	✓	✓	✓	✓
V	F	F	✓	F	F	✓
F	V	V	✓	✓	F	✓
F	V	F	✓	F	F	✓
F	F	V	F	✓	✓	✓
F	F	F	F	✓	✓	⊥



18)  $((A \wedge B) \rightarrow C) \wedge \sim B \rightarrow C$

A	B	C	$A \wedge B$	$(A \wedge B) \rightarrow C$	$((A \wedge B) \rightarrow C) \wedge \sim B$	$((A \wedge B) \rightarrow C) \wedge \sim B \rightarrow C$
V	V	V	V	V	F	V
V	V	F	V	F	F	V
V	F	V	F	V	V	V
V	F	F	F	V	V	F
F	V	V	F	V	F	V
F	V	F	F	V	F	V
F	F	V	F	V	V	V
F	F	F	F	V	V	F

19)  $(A \vee B) \rightarrow (A \wedge C)$

A	B	C	$A \vee B$	$A \wedge C$	$(A \vee B) \rightarrow (A \wedge C)$
V	V	V	V	V	V
V	V	F	V	F	F
V	F	V	V	V	V
V	F	F	V	F	F
F	V	V	V	F	F
F	V	F	V	F	F
F	F	V	F	F	V
F	F	F	F	F	V

20)  $(A \rightarrow C) \rightarrow B$

A	B	C	$A \rightarrow C$	$(A \rightarrow C) \rightarrow B$
V	V	V	V	V
V	V	F	F	V
V	F	V	V	F
V	F	F	F	V
F	V	V	V	V
F	V	F	V	V
F	F	V	V	F
F	F	F	V	F

21)  $(A \wedge C) \leftrightarrow \sim B$

A	B	C	$A \wedge C$	$(A \wedge C) \leftrightarrow \sim B$
V	V	V	✓	F
V	V	F	F	✓
V	F	V	✓	✓
V	F	F	F	F
F	V	V	F	✓
F	V	F	F	✓
F	F	V	F	F
F	F	F	F	F

22)  $(A \rightarrow \sim C) \vee (B \rightarrow C)$

A	B	C	$A \rightarrow \sim C$	$B \rightarrow C$	$(A \rightarrow \sim C) \vee (B \rightarrow C)$
V	V	V	F	✓	✓
V	V	F	✓	F	✓
V	F	V	F	✓	✓
V	F	F	✓	✓	✓
F	V	V	✓	✓	✓
F	V	F	✓	F	✓
F	F	V	✓	✓	✓
F	F	F	✓	✓	✓

23)  $(A \rightarrow C) \vee \sim(\sim B \rightarrow C)$

A	B	C	$A \rightarrow C$	$\sim B \rightarrow C$	$\sim(\sim B \rightarrow C)$	$(A \rightarrow C) \vee \sim(\sim B \rightarrow C)$
V	V	V	✓	✓	F	✓
V	V	F	F	✓	F	F
V	F	V	✓	✓	F	✓
V	F	F	F	F	✓	✓
F	V	V	✓	✓	F	✓
F	V	F	✓	✓	F	✓
F	F	V	✓	✓	F	✓
F	F	F	✓	F	✓	✓