Leonardo Araujo

Ciencias da computação

Atividades do dia 06/04/2020

1. Construir as Tabelas Verdade das sentenças abaixo:

**a)~ (p ↔ ~ q) v (r ^ s)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | r | s | ~q | (p↔~q) | ~(p↔~q) | (r ^ s) | ~ (p ↔ ~ q) v (r ^ s) |
| V | V | V | V | F | F | V | V | **V** |
| V | V | V | F | F | F | V | F | **V** |
| V | V | F | V | F | F | V | F | **V** |
| V | V | F | F | F | F | V | F | **V** |
| V | F | V | V | V | V | F | V | **V** |
| V | F | V | F | V | V | F | F | **F** |
| V | F | F | V | V | V | F | F | **F** |
| V | F | F | F | V | V | F | F | **F** |
| F | V | V | V | F | V | F | V | **V** |
| F | V | V | F | F | V | F | F | **F** |
| F | V | F | V | F | V | F | F | **F** |
| F | V | F | F | F | V | F | F | **F** |
| F | F | V | V | V | F | V | V | **V** |
| F | F | V | F | V | F | V | F | **V** |
| F | F | F | V | V | F | V | F | **V** |
| F | F | F | F | V | F | V | F | **V** |

**b)~ (r ^ s) v ~ (p ↔ q)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | r | s | (r ^ s) | ~ (r ^ s) | (p ↔ q) | ~ (p ↔ q) | ~ (r ^ s) v ~ (p ↔ q) |
| V | V | V | V | V | F | V | F | **F** |
| V | V | V | F | F | V | V | F | **V** |
| V | V | F | V | F | V | V | F | **V** |
| V | V | F | F | F | V | V | F | **V** |
| V | F | V | V | V | F | F | V | **V** |
| V | F | V | F | F | V | F | V | **V** |
| V | F | F | V | F | V | F | V | **V** |
| V | F | F | F | F | V | F | V | **V** |
| F | V | V | V | V | F | F | V | **V** |
| F | V | V | F | F | V | F | V | **V** |
| F | V | F | V | F | V | F | V | **V** |
| F | V | F | F | F | V | F | V | **V** |
| F | F | V | V | V | F | V | F | **F** |
| F | F | V | F | F | V | V | F | **V** |
| F | F | F | V | F | V | V | F | **V** |
| F | F | F | F | F | V | V | F | **V** |

**c) [p v (q ^ r)] ↔ [(p v q) ^ (s v r)]**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | r | s | (q ^ r) | [p v (q ^ r)] | (p v q) | (s v r) | [(p v q) ^ (s v r)] | **[p v (q ^ r)] ↔**  **[(p v q) ^ (s v r)]** |
| V | V | V | V | V | V | V | V | V | **V** |
| V | V | V | F | V | V | V | V | V | **V** |
| V | V | F | V | F | V | V | V | V | **V** |
| V | V | F | F | F | V | V | F | F | **F** |
| V | F | V | V | V | V | V | V | V | **V** |
| V | F | V | F | V | V | V | V | V | **V** |
| V | F | F | V | F | V | V | V | V | **V** |
| V | F | F | F | F | V | V | F | F | **F** |
| F | V | V | V | F | F | V | V | V | **F** |
| F | V | V | F | F | F | V | V | V | **F** |
| F | V | F | V | F | F | V | V | V | **F** |
| F | V | F | F | F | F | V | F | F | **V** |
| F | F | V | V | F | F | F | V | F | **V** |
| F | F | V | F | F | F | F | V | F | **V** |
| F | F | F | V | F | F | F | V | F | **V** |
| F | F | F | F | F | F | F | F | F | **V** |

d) Não é verdadeiro que se 2 + 2 = 4, então 3+3 =5 ou 1+1=2

P: 2 + 2 = 4

Q: 3+3 =5

R: 1+1=2

~[p -> (q v r)]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| p | q | r | (q v r) | [p -> (q v r)] | **~[p -> (q v r)]** |
| V | V | V | V | V | **F** |
| V | V | F | V | V | **F** |
| V | F | V | V | V | **F** |
| V | F | F | F | F | **V** |
| F | V | V | V | V | **F** |
| F | V | F | V | V | **F** |
| F | F | V | V | V | **F** |
| F | F | F | F | V | **F** |