|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | r | [( p ⇒ q ) ∧ ( q ⇒ r )] ⇒ ( p ⇒ r) | | | | | | | | | | |
| V | V | V | V | V | V | V | V | V | V | V | V | V | V |
| V | V | F | V | V | V | F | V | F | F | V | V | F | F |
| V | F | V | V | F | F | F | F | V | V | V | V | V | V |
| V | F | F | V | F | F | F | F | V | F | V | V | F | F |
| F | V | V | F | V | V | V | V | V | V | V | F | V | V |
| F | V | F | F | V | V | F | V | F | F | V | F | V | F |
| F | F | V | F | V | F | V | F | V | V | V | F | V | V |
| F | F | F | F | V | F | V | F | V | F | V | F | V | F |

B) [( p ⇒ q ) ∧ ( q ⇒ r )] ⇒ ( p ⇒ r)

TAULOGIA TODO ES VERDAD

c) [p ∧ ( p ⇒ q )] ⇒ q

TAULOGIA TODO ES VERDAD

a) (p v q) <=> (q v p)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | [p ∧ ( p ⇒ q )] ⇒ q | | | | | | |
| V | V | V | V | V | V | V | V | V |
| V | F | V | F | V | F | F | V | F |
| F | V | F | F | F | V | V | V | V |
| F | F | F | F | F | V | F | V | F |

TAULOGIA TODO ES VERDAD

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | (p v q) <=> (q v p) | | | | | | |
| V | V | V | V | V | V | V | V | V |
| V | F | V | V | F | V | F | V | V |
| F | V | F | V | V | V | V | V | F |
| F | F | F | F | F | V | F | F | F |

d) ( p ⇒ q) ⇔ ( ¬ q ⇒ ¬p)

Contingente

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | (p v q) <=> (q v p) | | | | | | |
| V | V | V | V | V | V | V | V | V |
| V | F | V | V | F | V | F | V | V |
| F | V | F | V | V | V | V | V | F |
| F | F | F | F | F | V | F | F | F |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | ( p ⇒ q) ⇔ ( ¬ q ⇒ ¬p) | | | | | | |
| V | V | V | V | V | V | F | V | F |
| V | F | V | F | F | F | V | V | F |
| F | V | F | V | V | F | F | F | V |
| F | F | F | V | F | V | V | V | V |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | (p v q) <=> (q v p) | | | | | | |
| V | V | V | V | V | V | V | V | V |
| V | F | V | V | F | V | F | V | V |
| F | V | F | V | V | V | V | V | F |
| F | F | F | F | F | V | F | F | F |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | (p v q) <=> (q v p) | | | | | | |
| V | V | V | V | V | V | V | V | V |
| V | F | V | V | F | V | F | V | V |
| F | V | F | V | V | V | V | V | F |
| F | F | F | F | F | V | F | F | F |
| p | q | (p v q) <=> (q v p) | | | | | | |
| V | V | V | V | V | V | V | V | V |
| V | F | V | V | F | V | F | V | V |
| F | V | F | V | V | V | V | V | F |
| F | F | F | F | F | V | F | F | F |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| p | q | (p v q) <=> (q v p) | | | | | | |
| V | V | V | V | V | V | V | V | V |
| V | F | V | V | F | V | F | V | V |
| F | V | F | V | V | V | V | V | F |
| F | F | F | F | F | V | F | F | F |