1-2. Баулин 549

1. А – высказывание

Б – ложное высказывание

В – не высказывание

1. Я бы попал на необитаемый остров = A;

В глухую тайгу = B;

Я бы смог выжить = С.

Если А или B, то C

(A||B) => C

1. A||B
2. (A||B) => C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A | B | C | A||B | (A||B) => C |
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Выполнимая формула, не тождественно истинна

1. А) (D=>B) || A;

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| D | B | A | D=>B | (D=>B) || A |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Выполнимая формула, не тождественно истинна

Б) (A||B)&(!C)=>A||B||(!C)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| A | B | C | !C | A||B | (A||B)&(!C) | A||B||(!C) | (A||B)&(!C) => A||B||(!C) |
| 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |

Выполнимая формула, не тождественно истинна

1. А) ((X&!Y) => Y) => (X=>!Y) ≡ (!(X&!Y) || Y) => (!X||!Y) ≡ (!((!X||Y) || || Y)) || (!X||!Y) ≡ (!(!X||Y) || !Y) || (!X||!Y) ≡ ((X&!Y) || !Y) || (!X||!Y) ≡

≡ ((X||!Y)&(!Y||!Y))|| (!X||!Y) ≡ !X||!Y

Б) !(!P&!Q)||((P=>Q)&P) ≡ !!(P||Q) || ((!P||Q)&P) ≡ (P||Q) || ((!P & P) || (P & & Q)) ≡ (P||Q) || (P & Q) ≡ P||Q

1. A ⬄B ~ (!A||B)&(A||!B)

(!A||B)&(A||!B) ≡ (!A||B&A)||(!A||B&!B) = (A&B) || (!A & !B)

1. !(A&B):

|  |  |  |  |
| --- | --- | --- | --- |
| A | B | A&B | !(A&B) |
| 0 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 1 | 1 | 0 |

!A & !B:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A | B | !A | !B | !A & !B |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |

Формулы не равносильны

