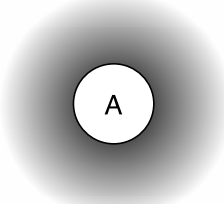
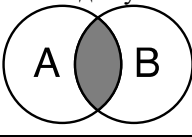
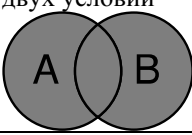
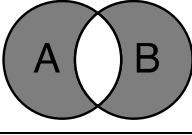
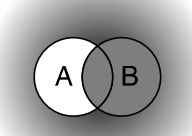
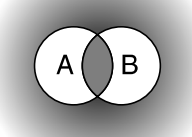


Таблица основных логических операций

| Название   | Приоритет         | Обозначение<br>(вначале часто используемые)                         | Примеры  | Логический и графический смысл<br>(круги Эйлера)  | Таблица истинности  |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
|--|-------------------|---|--|---|---|---|-----------|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| <i>инверсия</i><br>(отрицание)   | 1<br>(наивысший)  | $\neg$<br>—<br>A<br>не<br>not<br>!                                  | $C = \neg A$<br>$C = \bar{A}$<br>не A<br>not A<br>$C = !A$   | <b>Логическое «НЕ», инверсия</b><br>Противоположное исходному.<br>  | <table border="1"><tr><td>A</td><td><math>\bar{A}</math></td></tr><tr><td>0</td><td>1</td></tr><tr><td>1</td><td>0</td></tr></table>  | A | $\bar{A}$ | 0                      | 1 | 1 | 0 |   |   |   |   |   |   |   |   |   |
| A  | $\bar{A}$         |   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 1                 |   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 0                 |   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| <i>конъюнкция</i><br>(логическое умножение)                                    | 2                 | $\wedge$<br>$\times$<br>$\cdot$<br>$\cap$<br>и<br>and<br>&<br>&&    | $C = A \wedge B$<br>$C = A \times B$<br>$C = A \cdot B$<br>$C = A \cap B$<br>C = A и B<br>$C = A \text{ and } B$<br>$C = A \& B$<br>$C = A \&\& B$ | <b>Логическое «И», пересечение</b><br>Должны быть истинным одновременно два условия<br>                               | <table border="1"><tr><td>A</td><td>B</td><td><math>A \wedge B</math></td></tr><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>0</td><td>1</td><td>0</td></tr><tr><td>1</td><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td><td>1</td></tr></table>           | A | B         | $A \wedge B$           | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| A  | B                 | $A \wedge B$  |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 0                 | 0   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 1                 | 0   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 0                 | 0   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 1                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| <i>дизъюнкция</i><br>(логическое сложение)                                     | 3                 | $\vee$<br>+<br>$\cup$<br>или<br>or<br> <br>                         | $C = A \vee B$<br>$C = A + B$<br>$C = A \cup B$<br>C = A или B<br>$C = A \text{ or } B$<br>$C = A   B$<br>$C = A    B$                             | <b>Логическое «ИЛИ», объединение</b><br>Должно быть истинным хотя бы одно из двух условий<br>                        | <table border="1"><tr><td>A</td><td>B</td><td><math>A \vee B</math></td></tr><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>0</td><td>1</td><td>1</td></tr><tr><td>1</td><td>0</td><td>1</td></tr><tr><td>1</td><td>1</td><td>1</td></tr></table>             | A | B         | $A \vee B$             | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| A  | B                 | $A \vee B$  |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 0                 | 0   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 1                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 0                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 1                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| <i>строгая дизъюнкция</i><br>(исключающее «или»)                               | 3                 | $\underline{\vee}$<br>$\oplus$<br>$\neq$<br>xor                     | $C = A \underline{\vee} B$<br>$C = A \oplus B$<br>$C = A \neq B$<br>$C = A \text{ xor } B$   | <b>Логическое строгое «ИЛИ»</b><br>Только одно из двух условий должно выполняться.<br>                              | <table border="1"><tr><td>A</td><td>B</td><td><math>A \underline{\vee} B</math></td></tr><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>0</td><td>1</td><td>1</td></tr><tr><td>1</td><td>0</td><td>1</td></tr><tr><td>1</td><td>1</td><td>0</td></tr></table> | A | B         | $A \underline{\vee} B$ | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 |
| A  | B                 | $A \underline{\vee} B$  |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 0                 | 0   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 1                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 0                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 1                 | 0   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| <i>импликация</i><br>(логическое следствие)                                    | 4                 | $\Rightarrow$<br>$\rightarrow$<br>$\supset$<br>imp                  | $C = A \Rightarrow B$<br>$C = A \rightarrow B$<br>$C = A \supset B$<br>$C = A \text{ imp } B$  | <b>Логическое следование</b><br>Не выполняется только в том случае, если предпосылка истина, а следствие ложно.<br> | <table border="1"><tr><td>A</td><td>B</td><td><math>A \Rightarrow B</math></td></tr><tr><td>0</td><td>0</td><td>1</td></tr><tr><td>0</td><td>1</td><td>1</td></tr><tr><td>1</td><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td><td>1</td></tr></table>      | A | B         | $A \Rightarrow B$      | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| A  | B                 | $A \Rightarrow B$   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 0                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 1                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 0                 | 0   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 1                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| <i>эквивалентность, эквиваленция</i><br>(логическое равенство, равносильность) | 5<br>(наименьший) | $\Leftrightarrow$<br>$\leftrightarrow$<br>$\equiv$<br>eqv<br>=<br>~ | $C = A \Leftrightarrow B$<br>$C = A \leftrightarrow B$<br>$C = A \equiv B$<br>$C = A \text{ eqv } B$<br>$C = (A = B)$<br>$C = (A \sim B)$          | <b>Логическое равенство</b><br>Для истинности выражения оба аргумента должны быть равны между собой.<br>            | <table border="1"><tr><td>A</td><td>B</td><td><math>A \Leftrightarrow B</math></td></tr><tr><td>0</td><td>0</td><td>1</td></tr><tr><td>0</td><td>1</td><td>0</td></tr><tr><td>1</td><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td><td>1</td></tr></table>  | A | B         | $A \Leftrightarrow B$  | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| A  | B                 | $A \Leftrightarrow B$   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 0                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 0  | 1                 | 0   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 0                 | 0   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |
| 1  | 1                 | 1   |  |   |   |   |           |                        |   |   |   |   |   |   |   |   |   |   |   |   |