



# Двоичная арифметика

# Сложение

$$0 + 0 = 0$$

$$0 + 1 = 1$$

$$1 + 0 = 1$$

$$1 + 1 = 10$$

$$\begin{array}{r} \overset{\text{1}}{\text{+}} \text{1010} \\ \text{1011} \\ \hline \text{10101} \end{array}$$
$$\begin{array}{r} \overset{\text{1}}{\text{+}} \overset{\text{1}}{\text{1}} \overset{\text{1}}{\text{1}} \\ \text{111} \\ \text{+} \\ \text{1} \\ \hline \text{10110} \end{array}$$

$$1) \quad 101100 + 10011 = 111111$$

$$2) \quad 111011 + 1001111 = 10001010$$

# Умножение

$$0 * 0 = 0$$

$$0 * 1 = 0$$

$$1 * 0 = 0$$

$$1 * 1 = 1$$

$$\begin{array}{r} * 101 \\ \hline 101 \\ + 000 \\ 101 \\ \hline 11001 \end{array}$$

$$\begin{array}{r} * 111 \\ \hline 111 \\ + 111 \\ 111 \\ 111 \\ \hline 1101001 \end{array}$$

1)  $1011 * 11 = 100001$

2)  $101 * 1001 = 101101$

# Вычитание

$$0 - 0 = 0$$

$$1 - 0 = 1$$

$$1 - 1 = 0$$

$$10 - 1 = 1$$

$$\begin{array}{r} 1011 \\ - 1010 \\ \hline \color{red}{0001} \end{array} \qquad \begin{array}{r} \color{red}{0\ 1\ 10} \\ 1001 \\ - 110 \\ \hline \color{red}{0011} \end{array}$$

$$1) \quad 1011 - 101 = \color{red}{110}$$

$$2) \quad 10001 - 1101 = \color{red}{100}$$

# Выполнить самостоятельно

## 1 вариант

- 1)  $110111 + 1110111 =$
- 2)  $1001111 + 111001 =$
- 3)  $100011 - 1110 =$
- 4)  $1100110 - 1000111 =$
- 5)  $10011 * 110 =$
- 6)  $11011 * 1010 =$

## 2 вариант

- 1)  $110101 + 1010101 =$
- 2)  $1101101 + 101011 =$
- 3)  $101011 - 11010 =$
- 4)  $1110110 - 1010111 =$
- 5)  $11001 * 1011 =$
- 6)  $10011 * 111 =$