Rechnen mit Binärzahlen

# Addieren

1. 1101 11112 + 11112

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
|  |  |  |  | 1 | 1 | 1 | 1 |
|  |  | 1 | 1 | 1 | 1 | 1 |  |
| 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 |

+

= 23810

1. 10 0100 11112 + 1 11012

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
|  |  |  |  |  | 1 | 1 | 1 | 0 | 1 |
|  |  |  |  | 1 | 1 | 1 | 1 | 1 |  |
| 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |

+

= 620­10

1. 1111 1100 11112 + 1 1111 11012

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
|  |  |  |  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  |
| 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |

+

= 455610

1. 10 1111 0100 11112 + 110 01012

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
|  |  |  |  |  |  |  | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
|  |  |  |  |  |  | 1 |  |  | 1 | 1 | 1 | 1 |  |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |

= 1221210

# Multiplizieren

1. 1010 \* 1010

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 0 | 1 | 0 | \* | 1 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 |  |  |  |  |  |
|  | 0 | 0 | 0 | 0 |  |  |  |  |
|  |  | 1 | 0 | 1 | 0 |  |  |  |
|  |  |  | 0 | 0 | 0 | 0 |  |  |
|  | 1 |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 0 | 1 | 0 | 0 |  |  |

= 10010

1. 11 \* 101010

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 0 | 1 | 0 | 1 | 0 | \* | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 | 0 |  |  |  |
|  | 1 | 0 | 1 | 0 | 1 | 0 |  |  |
|  |  |  |  |  |  |  |  |  |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 |  |  |

= 12610