

**AVALIAÇÃO FUNDAMENTOS DE INFORMÁTICA.**

**01 – Converter de decimal para binário.**

1 - 1/2 = 1

147 – 147/2 = 73 resta 1

73/2 = 36 resta 1

36/2 = 18 resta 0

18/2 = 9 resta 0

9/2 = 4 resta 1

4/2 = 2 resta 0

2/2 = 1 resta 0

1/2 = 1

369 - 369/2 = 184 resta 1

184/2 = 92 resta 0

92/2 = 46 resta 0

46/2 = 23 resta 0

23/2 = 11 resta 1

11/2 = 5 resta 1

5/2 = 4 resta 1

4/2 = 2 resta 0

2/2 = 1 resta 0

1/2 = 1

2 – 2/2 = 1 resta 0

3 – 3/2 = 1 resta 1

258 - 258/2 = 129 resta 0

129/2 = 64 resta 1

64/2 = 32 resta 0

32/2 = 16 resta 0

16/2 = 8 resta 0

8/2 = 4 resta 0

4/2 = 2 resta 0

2/2 = 1 resta 0

1/2 = 1

123456789 - 123456789/2 = 61.728.394 resta 1

241.126/2 = 120.563 resta 0

120.563/2 = 60.281 resta 1

60.281/2 = 30.140 resta 1

30.140/2 = 15.070 resta 0

15.070/2 = 7.535 resta 0

7.535/2 = 3.767 resta 1

3.767/2 = 1.883 resta 1

1.883/2 = 941 resta 1

941/2 = 470 resta 1

470/2 = 235 resta 0

235/2 = 117 resta 1

117/2 = 58 resta 1

58/2 = 29 resta 0

29/2 = 14 resta 1

14/2 = 7 resta 0

7/2 = 3 resta 1

3/2 = 1 resta 1

1/2 = 1

61.728.394/2 = 30.864.197 resta 0

30.864.197/2 = 15.432.098 resta 1

15.432.098/2 = 7.716.049 resta 0

7.716.049/2 = 3.858.024 resta 1

3.858.024/2 = 1.929.012 resta 0

1.929.012 /2 = 964.506 resta 0

964.506/2 = 482.253 resta 0

**02 – Converter de binário para decimal.**

Dica: muitas vezes já passamos pelas respostas em nossa vida.

1 - 1\*2⁰ = 1\*1 = 1

10 - 0\*2⁰ = 0\*1 = 0; 1\*2¹ = 1\*2 = 2; resultado 02

11 – 1\*2⁰ = 1\*1 = 1; 1\*2¹ = 1\*2 = 2; resultado 12

100000010 – 0\*2⁰ = 0\*1 = 0; 1\*2¹ = 1\*2 = 2; 0\*2² = 0\*4 = 0 ; 0\*2³ = 0\*8 = 0; 0\*2⁴ = 0\*16 = 0; 0\*2⁵ = 0\*32 = 0; 0\*2⁶ = 0\*64 = 0; 0\*2⁷ = 0\*128 = 0; 1\*2⁸ = 1\*256 = 256; resultado 02000000256

10010011 – 1\*2⁰ = 1\*1 = 1; 1\*2¹ = 1\*2 = 2; 0\*2² = 0\*4 = 0; 0\*2³ = 0\*8 = 0; 1\*2⁴ = 1\*16 = 16; 0\*2⁵ = 0\*32 = 0; 0\*2⁶ = 0\*64 = 0; 1\*2⁷ = 1\*128 = 128; resultado 12001600128

101110001 - 1\*2⁰ = 1\*1 = 1; 0\*2¹ = 0\*2 = 0; 0\*2² = 0\*4 = 0 ; 0\*2³ = 0\*8 = 0; 1\*2⁴ = 1\*16 = 16; 1\*2⁵ = 1\*32 = 32; 1\*2⁶ = 1\*64 = 64; 0\*2⁷ = 0\*128 = 0; 1\*2⁸ = 1\*256 = 256; resultado 10001632630256

1110101101111100110100010101 = - 1\*2⁰ = 1\*1 = 1; 0\*2¹ = 0\*2 = 0; 1\*2² = 1\*4 = 4; 0\*2³ = 0\*8 = 0; 1\*2⁴ = 1\*16 = 16; 0\*2⁵ = 0\*32 = 0; 0\*2⁶ = 0\*64 = 0; 0\*2⁷ = 0\*128 = 0; 1\*2⁸ = 1\*256 = 256; 0\*2⁹ = 0\*512 = 0; 1\*2¹⁰ = 1\*1024 = 1024; 1\*2¹¹ = 1\*2048 = 2048; 0\*2¹² = 0\*4.096 = 0; 0\*2¹³ = 0\*8.192= 0; 1\*2¹⁴ = 1\*16.384 = 16.384; 1\*2¹⁵ = 1\*32.768 = 32.768; 1\*2¹⁶ = 1\*65.536 = 65.536; 1\*2¹⁷ = 1\*131.072 = 131.072; 1\*2¹⁸= 1\*262.144 = 262.144; 0\*2¹⁹ = 0\*524.288 = 0; 1\*2²⁰= 1\*1.048.576 = 1.048.576; 1\*2²¹ = 1\*2.097.152 = 2.097.152; 0\*2²² = 0\*4.194.304= 0; 1\*2²³ = 1\*8.388.608 = 8.388.608; 0\*2²⁴ = 0\*16.777.216 = 0; 1\*2²⁵ = 1\*33.554.432 = 33.554.432; 1\*2²⁶ = 1\*67.108.864 = 67.108.864; 1\*2²⁷ = 1\*134.217.728 = 134.217.728; resultado 10401600025601024204800163843276865.536131072262144010485762.0971520838860803355443267108864134217728

**03 – Qual a sua data de aniversário?**

**070602 - 070602/2 = 35.301 = resta 0**

**4/2 = 2 resta 0**

**2/2 = 1 resta 0**

**1/2 = 1**

**551/2 = 275 resta 1**

**275/2 = 137 resta 1**

**137/2 = 68 resta 1**

**68/2 = 34 resta 0**

**34/2 = 17 resta 0**

**17/2 = 8 resta 1**

**8/2 = 4 resta 0**

**35.301/2 = 17.650 resta 1**

**17.650/2 = 8.825 resta 0**

**8.825/2 = 4.412 resta 1**

**4.412/2 2.206 resta 0**

**2.206/2 = 1.103 resta 0**

**1.103/2 = 551 resta 1**

**Minha data de aniversário em números binários: 10001001111001010**