PASAR DE DECIMAL A BINARIO Y DE BINARIO A DECIMAL

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **210** | **29** | **28** | **27** | **26** | **25** | **24** | **23** | **22** | **21** | **20** |  |
| 2048 | **1024** | **512** | **256** | **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |  |
|  |  |  |  |  |  |  |  | 1 | 1 | 1 | 1 | 15 |
|  |  |  |  |  |  |  |  | 1 | 0 | 1 | 0 | 10 |
|  |  |  |  |  |  | 1 | 1 | 0 | 1 | 1 | 1 | 55 |
|  |  | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 892 |
|  |  |  |  | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 169 |
|  |  |  | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 494 |

1510=11112

10=10102

**101010012=16910**

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

= 16910

49410=1111011102

PASAR DE BINARIO A BASE DECIMAL

100011012= 14110

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 210 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 |  |
|  |  | 512 | 256 | **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |  |
|  |  |  |  | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 141 |
|  |  |  |  |  |  |  |  | 1 | 1 | 0 | 1 | 13 |
|  |  |  |  |  |  | 1 | 1 | 1 | 0 | 1 | 1 | 59 |

128+8+4+1= 141

1101**2**=1310

PASAR BINARIO A BASE 10

1x**23** + 1x**22** + 0x**21** +1x**20**

**8 +4 + 0 +****1** =1310

1110112=59

PASAR DE BINARIO A BASE 8

LOS NUMEROS SON DEL

0 AL 7

SE AGRUPAN DE A 3

POR QUE 2**3**=8

|  |  |  |  |
| --- | --- | --- | --- |
| 22 | 21 | 20 |  |
| 4 | 2 | 1 |  |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 2 |
| 0 | 1 | 1 | 3 |
| 1 | 0 | 0 | 4 |
| 1 | 0 | 1 | 5 |
| 1 | 1 | 0 | 6 |
| 1 | 1 | 1 | 7 |

100011012=2158

0**10 001 1012= pasar a base 8**

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

2 1

5

**010 001 101**

**2 1 5**

**-------------------------------------------**

**00111101101111=75578**

|  |  |  |  |
| --- | --- | --- | --- |
| 22 | 21 | 20 |  |
| 4 | 2 | 1 |  |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 2 |
| 0 | 1 | 1 | 3 |
| 1 | 0 | 0 | 4 |
| 1 | 0 | 1 | 5 |
| 1 | 1 | 0 | 6 |
| 1 | 1 | 1 | 7 |

0**00 111 101 101 111**

**0 7 5 5 7**

**----------------------------------------------**

00**1 110 011=1638**

**1638 PASARLO A BASE 10**

**OPCION 1:**

**1X82+6X81+3X80**

**64 + 48 + 3 =11510**

DE BASE 10

A

BASE 8

**OPCION 2**

**1638 PASARLO A BINARIO**

**001 110 011 LLEVARLO A LA TABLA**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |
|  | **1** | **1** | **1** | **0** | **0** | **1** | **1** |

**64+32+16+2+1=11510**

**75578 pasar a base 10**

Opción 1:

7 x 83 +5x82 +5x81 + 7x80

7x512+320+40+7=395110

Opción 2:

7 5 5 78

111 101 101 1112

111101101111

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 210 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 |  |
| **2048** | **1024** | **512** | **256** | **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |  |
| **1** | **1** | **1** | **1** | **0** | **1** | **1** | **0** | **1** | **1** | **1** | **1** | 3951 |

PASAR DE BINARIO A BASE 16

LOS NUMEROS SON DEL

0 AL 15

SE AGRUPAN DE A 4 POR QUE 2**4**=16

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 23 | 22 | 21 | 20 |  |  |
| **8** | **4** | **2** | **1** | HEXA |  |
| 0 | 0 | 0 | 0 | 0 |  |
| 0 | 0 | 0 | 1 | 1 |  |
| 0 | 0 | 1 | 0 | 2 |  |
| 0 | 0 | 1 | 1 | 3 |  |
| 0 | 1 | 0 | 0 | 4 |  |
| 0 | 1 | 0 | 1 | 5 |  |
| 0 | 1 | 1 | 0 | 6 |  |
| 0 | 1 | 1 | 1 | 7 |  |
| 1 | 0 | 0 | 0 | 8 |  |
| 1 | 0 | 0 | 1 | 9 |  |
| 1 | 0 | 1 | 0 | A | 10 |
| 1 | 0 | 1 | 1 | B | 11 |
| 1 | 1 | 0 | 0 | C | 12 |
| 1 | 1 | 0 | 1 | D | 13 |
| 1 | 1 | 1 | 0 | E | 14 |
| 1 | 1 | 1 | 1 | F | 15 |

Pasar número binario a base 16:

1110000101110001: E17116

1110 0001 0111 0001

E 1 7 1

---------------

E17116=

11100001011100012

EJEMPLO DE BASE 16 A BASE 10

**OPCION 1**

**A7516=267710**

**10X162 + 7X161 + 5X160**

**2560 + 112 + 5 =2677**

**OPCION 2**

**A 7 5**

1010 0111 0101

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2048 | **1024** | **512** | **256** | **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |  |
| 1 | **0** | **1** | **0** | **0** | **1** | **1** | **1** | **0** | **1** | **0** | **1** | 2677 |

-----------------------------------------------------------------------------

**OTRA FORMA PASANDO EL 2158 A SISTEMA BINARIO:**

2 1 5 DE BASE 8 A

010 001 101 BINARIO

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |
| 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |

DE BINARIO A DECIMAL (BASE 10)

128+8+4+1=14110

CUALQUIER NUMERO EN BASE 2, 8, 16 SE LLEVA A BINARIO Y DE AHÍ A CUALQUIER BASE

A7516  PASARLO A BASE 8 = 51658

A 7 5 🡪 PASAR A BINARIO

1010 0111 01012

1010011101012 PASARLO A BASE 8

101 001 110 101

5 1 6 58

BASE 10=267710

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2048 | 1024 | 512 | 256 | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |
| 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
|  |  |  |  |  |  |  |  | 1 | 1 | 1 | 0 |
| 2677 |  |  |  |  |  |  |  |  |  |  |  |

7568 PASAR A BASE 16=1EE16

7 5 6 LO PASE A **BINARIO** AGUPANDO DE A 3

**111 101 110** ESTE NUMERO LO AGRUPE DE A 4

0001 1110 1110

1 E E16

CULAQUIER NUMERO DE BASE 2 A BASE 16 LO AGRUPO DE 4

**0001 1110 1110**