011010 26

100101 37

Operaciones - Multiplicación, Suma, Resta de todas

+ 11101100 476
0110110 11 219

1010110111 695

695 ÷ 2 = 347 residuo = 1
347 ÷ 2 = 173 residuo = 1
173 ÷ 2 = 86 residuo = 1
86 ÷ 2 = 43 residuo = 0
43 ÷ 2 = 21 residuo = 1

21 ÷ 2 = 10 residuo = 1
10 ÷ 2 = 5 residuo = 0
5 ÷ 2 = 2 residuo = 1
2 ÷ 2 = 1 residuo = 0
1 ÷ 2 = 0 residuo = 1

+ 11001100 314
00110101 65

101111011 379

379 ÷ 2 = 189 = 1
189 ÷ 2 = 94 = 1
94 ÷ 2 = 47 = 0
47 ÷ 2 = 23 = 1

23 ÷ 2 = 11 = 1
11 ÷ 2 = 5 = 1
5 ÷ 2 = 2 = 1
2 ÷ 2 = 1 = 0
1 ÷ 2 = 0 = 1

Escaneado con CamScanner

Resta

- 111011100 476 (111011100)₂
  011011011 219 (011011011)₂ Invertir 100100100 +1
  100000001 257

111011100
100100101
1100000001

- 11001100 204 Invertir
  00110101 53 → 11001010+1 = 11001011
  100110111 151

11001100
+ 11001011
→ 110010111

Se elimina el acarreo.

Multiplicación

× 111011100 476
  011011011 219
  11001011011110100 104244

104244 ÷ 2 = 52122 = 0
52122 ÷ 2 = 26061 = 0
26061 ÷ 2 = 13030 = 1
13030 ÷ 2 = 6515 = 0
6515 ÷ 2 = 3257 = 1
3257 ÷ 2 = 1628 = 1
1628 ÷ 2 = 814 = 0

814 ÷ 2 = 407 = 0
407 ÷ 2 = 203 = 1
203 ÷ 2 = 101 = 1
101 ÷ 2 = 50 = 1
50 ÷ 2 = 25 = 0
25 ÷ 2 = 12 = 1
12 ÷ 2 = 6 = 0

6 ÷ 2 = 3 = 0   3 ÷ 2 = 1 = 1   1 ÷ 2 = 0 = 1

× 11001100 204 = 10812
  00110101 53
  010101000111100
  0010101000111100 ←

10812 ÷ 2 = 5406 = 0
5406 ÷ 2 = 2703 = 0
2703 ÷ 2 = 1351 = 1
1351 ÷ 2 = 675 = 1
675 ÷ 2 = 337 = 1

337 ÷ 2 = 168 = 1
168 ÷ 2 = 84 = 0
84 ÷ 2 = 42 = 0
42 ÷ 2 = 21 = 0
21 ÷ 2 = 10 = 1

10 ÷ 2 = 5 = 0
5 ÷ 2 = 2 = 1
2 ÷ 2 = 1 = 0
1 ÷ 2 = 0 = 1

División

111011100 ⟌ 011011011 → 10

111011100 + 011011011 = 1000000001 = 257

→ 476 ÷ 219 = 219 × 2 = 438   476 − 438 = 38

2 = 10₂ → en decimal   257 − 219 = 38   100000001 − 011011011

38 = 100110₂ → en decimal   cosiente = 10   Resta = 000100110

Verif. 219 × 2 + 38 = 438 + 38 = 476

11001100 ⟌ 00110101 → 11

→ 204 ÷ 53 − 53 × 3 = 159   204 − 159 = 45   11001100 − 00110101

3 = 11 → en decimal   cosiente = 11   = 10010111

45 = 101101 → en decimal   Resto = 00101101

Verificar = 53 × 3 + 45 = 159 + 45 = 204

Escaneado con CamScanner

Octal

Suma

+ 64
  32
  ———
  116

4+2=6
3+6=9   9>8
9-8=1

$64_8 = 6\times8^1 + 4\times8^0 = 48+4 = 52_{10}$
$32_8 = 3\times8^1 + 2\times8^0 = 24+2 = 26_{10}$
78÷8=9:6   52+26=78_{10}
9÷8=1:1
1÷8=0:1

+ 57
  12
  ———
  71

7+2=9   9>8
9-8=1
5+1+1=7

$57_8 = 5\times8^1 + 7\times8^0 = 40+7 = 47_{10}$
$12_8 = 1\times8^1 + 2\times8^0 = 8+2 = 10_{10}$ 47+10=57
57÷8=7=1   7÷8=0=7=71

Resta

116
− 64
  32
  ———
  32

4-2=2
6-3=3

− 57
  12
  ———
  45

$57_8 = 5\times8^1 + 7\times8^0 = 40+7 = 47_{10}$
$12_8 = 1\times8^1 + 2\times8^0 = 8+2 = 10_{10}$
47-10=37

$64_8 = 6\times8^1 + 4\times8^0 = 48+4 = 52_{10}$
$32_8 = 3\times8^1 + 2\times8^0 = 24+2 = 26_{10}$
26÷8=3:2   52-26=26
3÷8=0:3   32

37÷8=4=4   45
4÷8=0=5

Multiplicación

× 64
  32
  ———
  2510

$=6\times8^1 + 4\times8^0 = 48+4 = 52_{10}$. 1352_{10}
$=3\times8^1 + 2\times8^0 = 24+2 = 26_{10}$

1352÷8=169=0   = 2510
169÷8=21=1
21÷8=2=5
2÷8=0=2

× 57
  12
  ———
  726

$=5\times8^1 + 7\times8^0 = 40+7 = 47_{10}$
$=1\times8^1 + 2\times8^0 = 8+2 = 10_{10}$
$=470_{10}$

470÷8=58=6   7÷8=0=7
58÷8=7=2 $=726_8$

División

64 |32
$32\times2 = 64_8$ 64
3×2=6 $=64_8$ −64
2×2=4   0

Cosiente = 2_8
Resto = 0_8

57 |12
   4
12×4=48
$4\times2 = 10_{10} = 12_8$
$4\times1 = 4+1 = 5_{10} = 5_8$
12×4=50
57-50=7
cosiente = 4_8
Resto = 7_8

Hexadecimal

Suma

F = 15 B = 11

$+\ FF_{16} = 15\times16^1 + 15\times16^0 = 255_{10} + 136_{10}$

$\underline{B5_{16} = 11\times16^1 + 5\times16^0 = 181_{10}}$

$1B4$

$436 \div 16 = 27 = 4$ $16\times27 = 432 - 436 = 4$

$27 \div 16 = 1 = 11$

$1 \div 16 = 0 = 1$

Resta

$-\ FF = 15\times16^1 + 15\times16^0 = 255$

$\underline{B5 = 11\times16^1 + 5\times16^0 = 181}$

$4A$ $255 - 181 = 74_{10}$

$74 \div 16 = 4 = 10$

$4 \div 16 = 0 = 4$

Multiplicación

$\times\ FF = 15\times16^1 + 15\times16^0 = 255$ $x = 46155_{10}$

$\underline{B5 = 11\times16^1 + 5\times16^0 = 181}$

$B4413$

$46155 \div 16 = 2884 = 11\ (B)$

$2884 \div 16 = 180 = 4$

$180 \div 16 = 11 = 4$

$11 \div 16 = 0 = 11\ (B)$

División

$$FF \overline{)\ B5}$$

$255 \div 181 = 1.408$

Cociente = 1

Resto = 74_{10}

$255 - 181 = 74_{10}$

$4 - 10$

$+\ 5F = 5\times16^1 + 15\times16^0 = 95_{10}$

$\underline{2A = 2\times16^1 + 10\times16^0 = 42_{10}}$

89 $95 + 42 = 137$

$137 \div 16 = 8$ residuo = 9

$8 \div 16 = 0$ Residuo = 8

$-\ 5F = 5\times16^1 + 15\times16^0 = 95_{16}$

$\underline{2A = 2\times16^1 + 10\times16^0 = 42_{10}}$

35 $95 - 42 = 53_{16}$

$53 \div 16 = 3 = 5$

$5 \div 16 = 0 = 3$

Multiplicación

$\times\ 5F = 5\times16^1 + 15\times16^0 = 95$

$\underline{2A = 2\times16^1 + 10\times16^1 = 42}$

$F96$ $95\times42 = 3990_{10}$

$3990 \div 16 = 249 = 6$

$249 \div 16 = 15\ (F) = 9$

$15 \div 16 = 0 = 15\ (F)$

División

$$5F \overline{)\ 2A}$$

$95 \div 42 = 2.261$

cociente : 2

Resto : 11

$2\times16 = 32_{10} = 19_{16}$

$2\times2 = 4 + 11 = 51 \div 15_{16} = 54$

$42\times2 = 54$

Escaneado con CamScanner