Sistemul de numeratie binar

1. Adunarea

1011101,11012+1110,0112=

Pasul1 aranjam numerele virgula sub virgule

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  |  |  |  |
| 1 | 0 | 1 | 1 | 1 | 0 | 1, | 1 | 1 | 0 | 1 | + |
|  |  |  | 1 | 1 | 1 | 0, | 0 | 1 | 1 |  |  |
| 1 | 1 | 0 | 1 | 1 | 0 | 0, | 0 | 0 | 1 | 1 |  |

1. Scaderea

101100,1012 – 1101,012

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| . | 1 | 10. | 10. | 1 | 10 | . | 10 |  |  |
| 1 | 0 | 1 | 1 | 0 | 0, | 1 | 0 | 1 | - |
|  |  | 1 | 1 | 0 | 1, | 0 | 1 |  |  |
|  | 1 | 1 | 1 | 1 | 1, | 0 | 1 | 1 |  |

1. Inmultirea

11011,112 \* 110,12

Pasul 1 aranjam numerele dupa partea dreapta

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  | 1 | 1 | 0 | 1 | 1, | 1 | 1 | \* |
|  |  |  |  |  |  |  |  |  |  |  | 1 | 1 | 0, | 1 |  |
|  |  |  |  |  |  |  |  | 1 | 1 | 0 | 1 | 1 | 1 | 1 |  |
|  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
|  |  |  |  |  |  | 1 | 1 | 0 | 1 | 1 | 1 | 1 |  |  | + |
|  |  |  |  |  | 1 | 1 | 0 | 1 | 1 | 1 | 1 |  |  |  |  |
|  |  |  |  | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0, | 0 | 1 | 1 |  |

1. Impartirea

11011,112 / 110,12

Pasul 1 deplasam virgule la ambele numere cu atitea pozitii la dreapta cate cifre dupa virgula ale numarului la care impartim(scapam de virgule in numarul al 2)

Pasul 2 determinam numarul de cifre care formeaza un numar mai mare de cit cel la care impartim, daca pina la virula nu avem asa numar de cifre vom pune 0, si vom repeta procedeu

Pasul 3 efectuam impartirea si calculam citul si restul . ne convingem despre corectitudinea impartirii comparand restul cu numarul la care impartim(restul<impartitorul)

Pasul 4 coborim cite o cifra din numarul pe care impartim si repetam pasul 3, in caz cind nu putem face impartirea dupa coborirea unei cifre la rezultat punem cifra 0

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  | - | 1 | 1 | 0 | 1 | 1 | 1, | 1 |  | 1 | 1 | 0 | 1 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 1 | 1 | 0 | 1 |  |  |  |  | 1 | 0 | 0, | 0 | 1 | 0 | 0 | 0 | 1 | … |
|  |  |  |  |  |  |  |  |  |  |  | 0 | 1 | 1 | 1 | 0 |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 1 | 1 | 0 | 1 |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 | 0 | 0 | 0 | 0 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 1 | 0 | 1 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |