Pop Andreea-Diana (Lector Dr.)

www.ubbcluj.ro/~mihis

Nota Sem: 10 dacă s-a obținut nr. med. de activ.
(parte intreagă) sau mai mult
ponderat: nr. activ. obținute / nr. mediu

Operații aritmetice de bază

Adunarea

Ex:

în baza 10:

$$\overset{+1\ +1}{743}_{(10)}^{+}$$
$$\underline{59_{(10)}}$$
$$802$$

$(3+9) \ / \ 10 = 1 \ \text{rest} \ 2$

$(4+5+1) \ / \ 10 = 1 \ \text{rest} \ 0$

$(7+0+1) \ / \ 10 = 0 \ \text{rest} \ 8$

$$a_m \ a_{n-1} \ldots a_1 \ a_{0(p)}^{+}$$
$$\underline{b_m \ b_{m-1} \ldots b_1 \ b_{0(p)}}$$
$$c_k \ c_{k-1} \ldots c_1 \ c_{0(p)}$$

$i = 0, \ max(m,n)$

$\quad k = max(m,n) + 1$

$\quad\quad\quad \text{dacă}$

$t_0 = 0$

$(a_i + b_i + t_i) \ / \ p = t_{i+1} \ \text{rest} \ c_i$

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baza 2

$$\overset{+1\ +1\ \ +1}{110010}_{(2)}^{+}$$
$$\underline{10011_{(2)}}$$
$$1000101_{(2)}$$

bază 5

$$\overset{+1\ +1}{1234}_{(5)}^{+}$$
$$\underline{340_{(5)}}$$
$$2124_{(5)}$$

baza 16

$$\overset{1\ \ \ 1}{7E2A}_{(16)}^{+}$$
$$\underline{3F2_{(16)}}$$
$$821C_{(16)}$$

Scăderea

Ex: $2805_{(10)}^{-1}$ ←

$$\frac{2805_{(10)}}{373_{(10)}}$$
$$2432_{(10)}$$

$5>3 \qquad 5-3=2$
$0<7 \qquad 10+0-7=3$
$8-1\geq3 \qquad 8-1-3=4$
$2\geq0 \qquad 2-0=2$

$A\geq B$ ←

$$a_m\, a_{m-1}\cdots a_1\, a_{0(p)}$$
$$b_m\, b_{m-1}\cdots b_1\, b_{0(p)}$$
$$\overline{\phantom{a_m\, a_{m-1}\cdots a_1\, a_{0(p)}}}$$
$$c_m\, c_{m-1}\cdots c_1\, c_0\,(p)$$

$i=\overline{0,m}\;,\; t_0=0$

$$c_i := \begin{cases} a_i + t_i - b_i, & \text{dacă } a_i+t_i \geq b_i,\; t_{i+1}=0 \\ p + a_i + t_i - b_i, & \text{altfel},\; t_{i+1}=-1 \end{cases}$$

baza 2

$$10110_{(2)} -$$
$$11011_{(2)}$$
$$01001_{(2)}$$

$9A3CF_{(16)} -$

$$\frac{9A3CF_{(16)}}{BE5C_{(16)}}$$
$$8E573_{(16)}$$

baza 8

$$6240_{(8)} -$$
$$2403_{(8)}$$
$$3633_{(8)}$$

$\begin{aligned}|\, &\frac{B}{E} - ?5 - \\ &\frac{}{5} \quad 15\, BE\end{aligned}$

Înmulțirea cu o cifră

Ex: $\overset{+3}{5}\overset{+2}{4}0\overset{+1}{1}2_{(10)}*$ ←

$7_{(10)}$

─────────

$37804_{(10)}$

$$a_n\, a_{n-1}\ldots a_1\, a_{0(p)}* \quad \leftarrow$$
$$b_{(p)}$$
─────────────
$$c_{m+1}c_m c_{m-1}\ldots c_1\, c_{0\,(p)}$$

$i=\overline{0,m}\,,\ t_o=0$

$7*2=14;\ 14/10=1\,rest\,4$

$(7*1+1)/10=0\,r\,8$

$(7*0+0)/10=0\,r\,0$

$(7*4+0)/10=2\,r\,8$

$(7*5+2)/10=3\,r\,7$

$$\left(b*a_i+t_i\right)/p=t_{i+1}\,rest\,c_i$$

$c_{m+1}=t_{m+1}$

$\overset{+1\ +1}{2\,0\,1\,2\,1}_{(3)}*$

$2_{(3)}$
──────────
$111012_{(3)}$

$\overset{2\ 2}{2}\,\overset{}{A}\,3_{(11)}*$

$B_{(16)}$
──────────
$1D01_{(16)}$

$33:16=2\,r\,1$

$112:16=7\,r\,0$

$29:16=1\,r\,13$

Împărțirea la o cifră

Ex: $\overrightarrow{2075_{(10)}} : 6_{(10)} = 0\ 3\ 4\ 5_{(10)}$ rest $5_{(10)}$

$(0*10+2):6 = 0$ rest 2

$(2*10+0):6 = 20:6 = 3$ rest 2

$(2*10+7):6 = 27:6 = 4$ rest 3

$(3*10+5):6 = 35:6 = 5$ rest 5

$\overrightarrow{a_m a_{m-1} \ldots a_1 a_{0(p)}} : b_{(p)} = c_m c_{m-1} \ldots c_1 c_{0(p)}$ rest $r_{(p)}$

$i = \overline{n,0} \qquad A_m = 0$

$(A_i * p + a_i)/b = c_i$ rest A_{i-1}

$r = A_{-1}$

baza 7:

$2163_{(7)} : 4_{(7)} = 0\ 3\ 6\ 6_{(7)}$ rest $0_{(7)}$

$2:4 = 0$ rest 2

$(2*7+1):4 = 15:4 = 3 \sim 3$

$(3*7+6):4 = 27:4 = 6 \sim 3$

$(3*7+5):4 = 26:4 = 6$

$2AC8_{(16)} : 6 = 0\ 7\ 2\ 7_{(16)}$ rest $2_{(16)}$

$(32+10)/6 = 42/6 = 7$