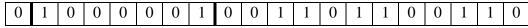
## Домашнее задание 7

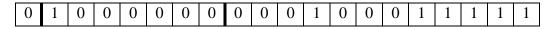
## УМНОЖЕНИЕ ЧИСЕЛ С ПЛАВАЮЩЕЙ ЗАПЯТОЙ

## Вариант 9

$$A = 3,4; B = 0,07$$
  
Формат  $\Phi I$   
 $A = 3,4 = (3,666)_{16} = (0,3666)_{16} \cdot 16^{1}$ 



$$B = 0.07 = (0.11EB)_{16} \cdot 16^{0}$$

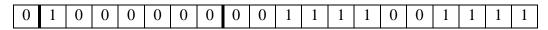


$$X_C = X_A + X_B - d = 1000001$$

Ускоренное умножение на 2 разряда множителя:

| N | Операнды  | СЧП (Старшие разряды) В/СЧП (младшие разряды)   | Признак<br>коррекции |
|---|---|---|----------------------|
| 0 | СЧП   |   | 0                    |
| 1 | [-М <sub>А</sub> ] <sub>доп</sub><br>СЧП<br>СЧП ->2 | 1 1 1 1 1 0 0 1 0 0 1 1 0 0 1 0 0 0 0 0   | 1                    |
| 2 | СЧП->2  |   | 1                    |
| 3 | 2М <sub>А</sub><br>СЧП<br>СЧП->2                    | 0 0 0 0 1 1 0 1 1 0 0 1 1 0 0 1 1 0 0 1 2M <sub>A</sub> 0 0 0 0 1 1 0 1 0 1 0 0 1 0 1 0 1 0 1 0   | 0                    |
| 4 | СЧП->2  | 0 0 0 0 0 0 0 0 1 1 0 1 0 0 1 0 1 1 0 1 0 0 1   | 0                    |
| 5 | М <sub>А</sub><br>СЧП<br>СЧП->2                     | 0       0       0       0       1       1       0       1       1       0       0       1       1       0       0       1       1       0       0       1       1       0       0       1       1       0       0       1       1       0       0       1       1       0       0       1       1       0 | 0                    |
| 6 | СЧП->2<br>4<- M <sub>C</sub>                        | 0     0     0     0     0     0     1     1     1     1     0     0     1     1     1     0     0     1     1     1     0     1     1     1     0     1     1     1     0     1     1     1     0     1     1     0     1     0     1     1     0     1     0     1     0 <td>0</td>  | 0                    |

$$X_C = X_C - 1 = 1000000$$



$$C^* = (0.3CF) \cdot 16^0 = 0.238037109375$$

$$\Delta C = C_T - C^* = 0.238 - 0.238037109375 = 0.000037109375$$

$$\delta C = \frac{\Delta \dot{C}}{C_T} \cdot 100\% = 0.016\%$$

## Формат Ф2

 $A = 3.4 = (11.0110011001)_2 = (0.110110011001)_2 \cdot 2^2$ 

 $B = 0.07 = (0.000100011110101)_2 = (0.100011110101)_2 \cdot 2^{-3}$ 

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

 $X_C = X_A + X_B - d = 111111111$ 

| $\Lambda_C - \Lambda_A + \Lambda_B - \mu - 111111111$ |                   |   |                                   |           |  |  |  |  |  |  |  |  |
|---|-------------------|---|-----------------------------------|-----------|--|--|--|--|--|--|--|--|
| N   | Операнды          | СЧП(старшие разряды) В/                               | 3/СЧП(младшие разряды)            | Признак   |  |  |  |  |  |  |  |  |
|   | 1                 |   | 1 1                               | коррекции |  |  |  |  |  |  |  |  |
|   | CHI               |   | 0 0 0 1 1 1 1 0 1 0 1             | коррекции |  |  |  |  |  |  |  |  |
|   | СЧП               | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1               | 0 0 0 1 1 1 1 0 1 0 1             |           |  |  |  |  |  |  |  |  |
| 0   |                   |   |                                   | 0         |  |  |  |  |  |  |  |  |
|   | $4M_A$            |   | $  $ $  $ $  $ $  $ $  $ $  $ $ $ |           |  |  |  |  |  |  |  |  |
|   | $M_A$             | 0 0 0 0 0 1 1 0 1 1 0 0 1 1 0 0 1                     |                                   |           |  |  |  |  |  |  |  |  |
|   | СЧП               | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ | 0 0 0 1 1 1 1 0 1 0 1             |           |  |  |  |  |  |  |  |  |
|   |                   |   |                                   |           |  |  |  |  |  |  |  |  |
| 1   | СЧП->4            |   | 1 0 1 1 0 0 0 1 1 1 0             | 1         |  |  |  |  |  |  |  |  |
|   | $2M_A$            | 0 0 0 0 1 1 0 1 1 0 0 1 1 0 0 1 0                     | -4M <sub>A</sub> 2M <sub>A</sub>  |           |  |  |  |  |  |  |  |  |
|   | -4M <sub>A</sub>  | 1 1 1 0 0 1 0 0 1 1 0 0 1 1 0 0 0 1 0 0               |                                   |           |  |  |  |  |  |  |  |  |
|   | СЧП               | 1 1 1 1 0 1 0 0 1 0 0 1 0 0 1 1 0 1                   | 1 0 1 1 0 0 0 1 1 1 0             |           |  |  |  |  |  |  |  |  |
| 2   |                   |   |                                   | 0         |  |  |  |  |  |  |  |  |
|   | СЧП->4            |   | 1 0 1 1 1 0 1 1 0 0 0             |           |  |  |  |  |  |  |  |  |
|   | 8M <sub>A</sub>   | 0 0 1 1 0 1 1 0 0 1 1 0 0 1 0 0 0                     | 8M <sub>A</sub> M <sub>A</sub>    |           |  |  |  |  |  |  |  |  |
|   | MA                | 0 0 0 0 1 1 0 1 1 0 0 1 1 0 0 1                       |                                   |           |  |  |  |  |  |  |  |  |
|   | СЧП               | 0 0 1 1 1 1 0 0 0 1 1 1 1 0 0 0 1 1                   | 1 0 1 1 1 0 1 1 0 0 0             |           |  |  |  |  |  |  |  |  |
| 3   | СЧП->4            | 0 0 0 0 0 0 1 1 1 1 0 0 0 1 1 1 1 0                   | 0 0 1 1 1 0 1 1 0 1               |           |  |  |  |  |  |  |  |  |
|   | <- M <sub>C</sub> | 0 0 0 0 1 1 1 1 0 0 0 1 1 1 1 0 0                     | 0 1 1 1 0 1 1 0 1 0               |           |  |  |  |  |  |  |  |  |

 $X_C = X_C - 1 = 11111110$   $C^* = (0,111100011110)_2 \cdot 2^{-2} = (0,00111100011110)_2 = 0,2362060546875$ 

| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | $\circ$ | 1 | 1 | 1 | 0 | Λ | Λ | 1 | 1 | 1 | 1 | 0 |
|---|---|---|---|---|---|---|---|---------|---|---|---|---|---|---|---|---|---|---|---|
| U | 1 | 1 | 1 | 1 | 1 | 1 | 1 | U       | 1 | I | 1 | U | U | U | 1 | 1 | 1 | 1 | U |
|   |   |   |   |   |   |   |   |         |   |   |   |   |   |   |   |   |   |   |   |

$$\Delta C = C_T - C^* = 0.238 - 0.2362060546875 = 0.00179394531$$
  
 $\delta C = \frac{\Delta C}{C_T} \cdot 100\% = 0.75\%$ 

$$\delta C = \frac{\Delta C}{C_T} \cdot 100\% = 0.75\%$$

Погрешности операндов вызваны неточным представлением операндов.