Домашняя работа №6

По "Дискретная математика"

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Вариант №8

$A = 16.385$ $B = 8.964$

$A = (16.385)_{10} = (10.6)_{16} = (0,106)_{16} \cdot 16^2$

16 384
8 964
25 348

0	1 0 0 0 0 1 0	0 0 0 1 0 0 0 0 0 1 1 1
0	1	7 8 19

$B = (8.964)_{10} = (8,F6)_{16} = (0,8F6)_{16} \cdot 16^1$

0	1 0 0 0 0 0 1	1 0 0 0 1 1 1 1 0 1 1 1
0	1	7 8 19

X_A 1000010

X_B 1000001

$(X_A - X_B)_{пр}$ 0000001 (1) $(X_A - X_B) = 1$ $X_C = X_B = 1$

а) $A > 0$ $B > 0$

M_A = .0001.00000111

$M_B \rightarrow 4$ .0000.00011111

M_C .000,10010110

0	0 0 0 0 0 0 1	0 0 0 1 0 0 1 0 1 1 0

$C^* = M_C \cdot 16^{P_C} = (0,196)_{16} \cdot 16^2 = (19,6)_{16} = 25.375$

$\Delta C = C_T - C^* = 25.349 - 25.375 = -0,026$

$\delta C = \left|\frac{\Delta C}{C_T}\right| \cdot 100\% = \left|\frac{0,026}{25,349}\right| \cdot 100\% \approx 0,10\%$

2) $A < 0$, $B > 0$

M_B 0000.0001.1111

M_A 000.10000111

$M_{доп}$ 111.11000.1000 $M_{C\,пр}$ 00000.111.1000

0	0 0 0 0 0 0 1,	0 0 0 0 0. 1 1 1 1 0 0 0

$C^* = M_C \cdot 16^{P_C} = 0,1\,8 \cdot 16^1 = (7,8)_{16} = (7,5)_{10}$

$\Delta C = C_T - C^* = 7,424 - 7,5 = -0,079$

$\delta C = \left|\frac{\Delta C}{C_T}\right| \cdot 100\% = \left|\frac{0,079}{7,424}\right| \cdot 100\% \approx 1,06\%$

5) $A>0$, $B<0$

M_A 0001000000111
$M_B^{\rightarrow}$ 0000100011111
M_c 0000011111000

0000000100000111111000

$C^* = M_c \cdot 16^{P_c} = (0,0938)_{10} \cdot 16^2 = 9,5$

$\Delta C = C_T - C^* = 9,421 - 7,5 = -0,079$

$\delta = \left|\frac{\Delta C}{C_T}\right| = \left|\frac{-0,079}{7,421}\right| \cdot 100\% = 1,06\%$

II Формат Φ_2

$A = (16.385)_{10} = (10.6)_{16} = (10000.0110000110100)_2 =$

$(0,1000001100001010 0)_2 \cdot 2^5$

0 10000 10100000 11000 1
19 18 11 10 0

$B = (8.941)_{10} = (8.F6)_{16} = (1000.1111011011 0)_2 =$

$0,1000111101101100 \cdot 2^4 =$

0 10000 10001111011000
19 18 11 10 0

1) X_A 10000101
X_B 10000100
$(X_A - X_B)$ 00000001 $X_c = X_B + 4$

$X_c = 1$

a) $A>0$ $B>0$

M_A 1000001100001
$M_B^{\rightarrow}$ + 0100011110111
M_c 1100101011100

0 10000101 100101011100

$C^* = M_c \cdot 2^{P_c} = (0,1100101011100)_2 \cdot 2^5 = (11001.010111 00)_2 =$

$(25.34375)_{10}$

$\Delta C = C_T - C^* = 25,349 - 25,34375 = 0,00525$

$$\delta C = \left|\frac{\Delta C}{C_T}\right| \cdot 100\% = \left|\frac{0{,}00525}{25{,}349}\right| \cdot 100\% = 0{,}020\%$$

б) $A < 0$, $B > 0$

$M_B^{\rightarrow}$ 0 1 0 0 0 1 1 1 1 0 1 1

M_A 1 0 0 0 0 0 1 1 0 0 0 1

$M_{доп}$ 1 1 0 0 0 1 0 0 1 0 1 0

$M_{пр}$ 0 0 1 1 1 0 1 1 0 1 1 0

1 0 0 0 0 1 1 0 0 0 1 1 0 1 1 0

$C^* = M_c \cdot 2^{P_c} = (0{,}0001110110)_2 \cdot 2^6 = (111{,}011011)_2 =$ 7,421875

$\Delta C = C_T - C^* = 7{,}421 - 7{,}421875 = -0{,}000875$

$\delta C = \left|\frac{0{,}000875}{7{,}421}\right| \cdot 100\% = 0{,}011\%$

б) $A > 0$, $B < 0$

M_A 1 0 0 0 0 0 1 1 0 0 0 1

$M_B^{\rightarrow}$ 0 1 0 0 0 1 1 1 1 0 1 1

M_{φ} 0 0 1 1 1 0 1 1 0 1 1 0

0 1 0 0 0 0 1 1 0 0 0 1 1 0 1 1 0 1 1

$C^* = M_c \cdot 2^{P_c} = (0{,}0001110110110)_2 \cdot 2^6 = (111{,}011011)_2 =$ 7,421875

$\Delta C = C_T - C^* = 7{,}421 - 7{,}421875 = -0{,}000875$

$\delta C = \left|\frac{0{,}000875}{7{,}421}\right| \cdot 100\% = 0{,}011\%$