Домашняя работа №8

Формат Ф1

$A = (2,1)_{10} = 2,1(9)_{16} \cdot 16^1 = 0,21(9)_{16}$

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

$B = (0,08)_{10} = 0,147AE_{16} \cdot 16^0 = 0,147AE_{16}$

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

$X_C = X_A - X_B + d$

$X_C = 1 - 0 + 64 = 65$

$P_C = 1$

№	Действие	Делимое	Частное
0	M_A	0 0 0 1 0 0 0 0 1	0 0 0 0 0 0 0 0
	$[-M_{Bдоп.}]$	1 1 1 1 0 1 1 0 0	
	R_0	0 0 0 0 0 1 1 0 1	$R_0 > 0$
	$M_A => 4$	0 0 0 0 0 0 0 1 0	0 0 0 1 0 0 0 0
	$[-M_{Bдоп.}]$	1 1 1 1 0 1 1 0 0	
	R_0	1 1 1 1 0 1 1 1 0	0 0 0 1 0 0 0 0
1	$<= R_0$	1 1 1 0 1 1 1 0 0	0 0 1 0 0 0 0 0
	M_B	0 0 0 0 1 0 1 0 0	
	R_1	1 1 1 1 1 0 0 0 0	0 0 1 0 0 0 0 0
2	$<= R_1$	1 1 1 1 0 0 0 0 0	0 1 0 0 0 0 0 0
	M_B	0 0 0 0 1 0 1 0 0	
	R_2	1 1 1 1 1 0 1 0 0	0 1 0 0 0 0 0 0
3	$<= R_2$	1 1 1 1 0 1 0 0 0	1 0 0 0 0 0 0 0
	M_B	0 0 0 0 1 0 1 0 0	
	R_3	1 1 1 1 1 1 1 0 0	1 0 0 0 0 0 0 0
4	$<= R_3$	1 1 1 1 1 1 0 0 1	0 0 0 0 0 0 0 0
	M_B	0 0 0 0 1 0 1 0 0	
	R_4	0 0 0 0 0 1 1 0 1	0 0 0 0 0 0 0 1
5	$<= R_4$	0 0 0 0 1 1 0 1 0	0 0 0 0 0 0 1 0
	$[-M_{Bдоп.}]$	1 1 1 1 0 1 1 0 0	
	R_5	0 0 0 0 0 0 1 1 0	0 0 0 0 0 0 1 1
6	$<= R_5$	0 0 0 0 0 1 1 0 0	0 0 0 0 0 1 1 0
	$[-M_{Bдоп.}]$	1 1 1 1 0 1 1 0 0	
	R_6	1 1 1 1 1 1 0 0 0	0 0 0 0 0 1 1 0
7	$<= R_6$	1 1 1 1 1 0 0 0 0	0 0 0 0 1 1 0 0

	M_B	0 0 0 0 1 0 1 0 0	
	R_7	0 0 0 0 0 0 1 0 0	0 0 0 0 1 1 0 1
8	$<= R_7$	0 0 0 0 0 1 0 0 0	0 0 0 1 1 0 1 0
	$[-M_{Bдоп.}]$	1 1 1 1 0 1 1 0 0	
	R_8	1 1 1 1 1 0 1 0 0	0 0 0 1 1 0 1 0

$C* = (0,1A) \cdot 16^2 = (1A)_{16} \cdot 16^0 = 26_{10}$

$C_T = 26,25$

$\Delta C = 26,25 - 26 = 0,25$

$\delta C = \left| \frac{0,25}{26,25} \right| \cdot 100\% = 0,009\%$

Погрешность вызвана неточным представлением операндов, и она больше, чем при делении в формате Ф2

Формат Ф2

$A = (2,1)_{10} = 10,00011001100 \cdot 2^2 = 0,1000011001100_2$

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

$B = (0,08)_{10} = 0.00010100011 \cdot 2^{-3} = 0,10100011_2$

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

$X_C = X_A - X_B + d$

$X_C = 2 - (-3) + 128 = 133$

$P_C = 5$

№	Действие	Делимое	Частное
0	M_A	0 1 0 0 0 0 1 1 0	0 0 0 0 0 0 0 0
	$[-M_B]_{доп}$	1 0 1 0 1 1 1 0 1	
	R_0	**1** 1 1 1 0 0 0 1 1	0 0 0 0 0 0 0 **0**
1	$<= R_0$	1 1 1 0 0 0 1 1 0	0 0 0 0 0 0 0 0
	M_B	0 1 0 1 0 0 0 1 1	
	R_1	**0** 0 1 1 0 1 0 0 1	0 0 0 0 0 0 0 **1**
2	$<= R_1$	0 1 1 0 1 0 0 1 0	0 0 0 0 0 0 1 0
	$[-M_B]_{доп}$	1 0 1 0 1 1 1 0 1	
	R_2	**0** 0 0 1 0 1 1 1 1	0 0 0 0 0 0 1 **1**
3	$<= R_2$	0 0 1 0 1 1 1 1 0	0 0 0 0 0 1 1 0
	$[-M_B]_{доп}$	1 0 1 0 1 1 1 0 1	
	R_3	**1** 1 0 1 1 1 0 1 1	0 0 0 0 0 1 1 **0**
4	$<= R_3$	1 0 1 1 1 0 1 1 0	0 0 0 0 1 1 0 0

	M_B	0 1 0 1 0 0 0 1 1	
	R_4	**0** 0 0 0 1 1 0 0 1	0 0 0 0 1 1 0 **1**
5	$<= R_4$	0 0 0 1 1 0 0 1 0	0 0 0 1 1 0 1 0
	$[-M_B]_{доп}$	1 0 1 0 1 1 1 0 1	
	R_5	**1** 1 0 0 0 1 1 1 1	0 0 0 1 1 0 1 **0**
6	$<= R_5$	1 0 0 0 1 1 1 1 0	0 0 1 1 0 1 0 0
	M_B	0 1 0 1 0 0 0 1 1	
	R_6	**1** 1 1 0 0 0 0 0 1	0 0 1 1 0 1 0 **0**
7	$<= R_6$	1 1 0 0 0 0 0 1 0	0 1 1 0 1 0 0 0
	M_B	0 1 0 1 0 0 0 1 1	
	R_7	**0** 0 0 1 0 0 1 0 1	0 1 1 0 1 0 0 **1**
8	$<= R_7$	0 0 1 0 0 1 0 1 0	1 1 0 1 0 0 1 0
	$[-M_B]_{доп}$	1 0 1 0 1 1 1 0 1	
	R_8	**1** 1 0 1 0 0 1 1 1	1 1 0 1 0 0 1 **0**

$C = 0{,}11010010 \cdot 2^5 = 11010{,}010_2 = 26{,}25_{10}3$

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

$C_T = 26{,}25$

$\Delta C = 26{,}25 - 26{,}26 = 0$

$\delta C = \left| \dfrac{0}{26{,}25} \right| \cdot 100\% = 0\%$