

Домашнее задание №8

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A=6.6

B=0.026

1. Формат Ф1

$$A = (6.6)_{10} = (6,99999A)_{16} = (0,699999A)_{16} \cdot 16^1$$

0	1	0	0	0	0	0	1	0	1	1	0	1	0	1	0
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$$B = (0.026)_{10} = (0,06A7F)_{16} = (0,6A7F)_{16} \cdot 16^{-1}$$

0	0	1	1	1	1	1	0	1	1	0	1	0	1	0
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$$X_C = X_A - X_B + d$$

$$PC = \frac{d + PA + d - PB - d}{PC} + d$$

$$X_C = 1 - (-1) + 64 = 66$$

$$P_C = 2$$

№ шага	Действие	Делимое	Частное
0	МА		
	[-	0 0 1 1 0 1 0 1 0	0 0 0 0 0 0 0 0
	МВ]доп	1 1 0 0 1 0 1 1 0	
	R0	0 0 0 0 0 0 0 0 0	R0>0
	МА→4	0 0 0 0 0 0 1 1 0	1 0 1 0 0 0 0 0
	[-	1 1 0 0 1 0 1 1 0	
	МВ]доп	1 1 0 0 1 1 1 0 0	1 0 1 0 0 0 0 0
	R0		0
1	←R0	1 0 0 1 1 1 0 0 1	0 1 0 0 0 0 0 0
	[МВ]пр	0 0 1 1 0 1 0 1 0	
	R1	1 1 0 1 0 0 0 1 1	0 1 0 0 0 0 0 0
2	←R1	1 0 1 0 0 0 1 1 0	1 0 0 0 0 0 0 0
	[МВ]пр	0 0 1 1 0 1 0 1 0	
	R2	1 1 0 1 1 0 0 0 0	1 0 0 0 0 0 0 0
3	←R2	1 0 1 1 0 0 0 0 1	0 0 0 0 0 0 0 0
	[МВ]пр	0 0 1 1 0 1 0 1 0	
		1 1 1 0 0 1 0 1 1	0 0 0 0 0 0 0 0

	R3		
4	←R3	1 1 0 0 1 0 1 1 0	0 0 0 0 0 0 0 0
	[MB]пр	0 0 1 1 0 1 0 1 0	
	R4	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1
5	←R4	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 1 0
	[-	1 1 0 0 1 0 1 1 0	
	MB]доп	1 1 0 0 1 0 1 1 0	0 0 0 0 0 0 1 0
6	←R5	1 0 0 1 0 1 1 0 0	0 0 0 0 0 1 0 0
	[MB]пр	0 0 1 1 0 1 0 1 0	
	R6	1 1 0 0 1 0 1 1 0	0 0 0 0 0 1 0 0
7	←R6	1 0 0 1 0 1 1 0 0	0 0 0 0 1 0 0 0
	[MB]пр	0 0 1 1 0 1 0 1 0	
	R7	1 1 0 0 1 0 1 1 0	0 0 0 0 1 0 0 0
8	←R7	1 0 0 1 0 1 1 0 0	0 0 0 1 0 0 0 0
	[MB]пр	0 0 1 1 0 1 0 1 0	
	R8	1 1 0 0 1 0 1 1 0	0 0 0 1 0 0 0 0

$$C^* = (0,1)_{16} \cdot 16^3 = 256.$$

Определим абсолютную и относительную погрешности результата:

$$\Delta C = 253,84615385 - 256 = -2,15384615$$

$$\delta C = \left| \frac{-2,15384615}{253,84615385} \right| \cdot 100\% = 0,84848485\%$$

2. Формат Ф2

$$A = (6.6)_{10} = (6,99999A)_{16} = (0,110100110011001101)_2 \cdot 2^3$$

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

$$B = (0.026)_{10} = (0,06A7F)_{16} = (0,11010101)_2 \cdot 2^{-5}$$

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

$$X_C = X_A - X_B + d$$

$$PC = \frac{d + PA + d - PB - d}{PC} + d$$

$$X_C = 3 - (-5) + 128 = 136$$

$$P_C = 8$$

№ шага	Действие	Делимое	Частное
0	MA [-MB] _{доп} R0	0 1 1 0 1 0 0 1 1 1 0 0 1 0 1 0 1 1 1 1 1 1 1 1 1 1 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	←R0 [MB] _{пр} R1	1 1 1 1 1 1 1 0 0 0 1 1 0 1 0 1 0 1 0 1 1 0 1 0 0 0 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
2	←R1 [-MB] _{доп} R2	1 1 0 1 0 0 0 1 0 1 0 0 1 0 1 0 1 1 0 1 1 0 0 1 1 0 1	0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 1
3	←R2 [-MB] _{доп} R3	1 1 0 0 1 1 0 1 0 1 0 0 1 0 1 0 1 1 0 1 1 0 0 0 1 0 1	0 0 0 0 0 1 1 0 0 0 0 0 0 1 1 1
4	←R3 [-MB] _{доп} R4	1 1 0 0 0 1 0 1 0 1 0 0 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1	0 0 0 0 1 1 1 0 0 0 0 0 1 1 1 1
5	←R4 [-MB] _{доп} R5	1 0 1 1 0 1 0 1 0 1 0 0 1 0 1 0 1 1 0 1 0 0 1 0 1 0 1	0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 1
6	←R5 [-MB] _{доп} R6	1 0 0 1 0 1 0 1 0 1 0 0 1 0 1 0 1 1 0 0 1 0 1 0 1 0 1	0 0 1 1 1 1 1 0 0 0 1 1 1 1 1 1
7	←R6 [-MB] _{доп} R7	0 1 0 1 0 1 0 1 0 1 0 0 1 0 1 0 1 1 1 1 1 0 1 0 1 0 1	0 1 1 1 1 1 1 0 0 1 1 1 1 1 1 0
8	←R7 [MB] _{пр} R8 MC→	1 1 0 1 0 1 0 1 0 0 1 1 0 1 0 1 0 1 0 0 1 1 1 1 1 1 1	1 1 1 1 1 1 0 0 1 1 1 1 1 1 0 1 0 1 1 1 1 1 0 1

$$C^* = (0,11111101)_2 \cdot 2^8 = 253.$$

Определим абсолютную и относительную погрешности результата:

$$\Delta C = 253,84615385 - 253 = 0,84615385$$

$$\delta C = \frac{|0,84615385|}{|253,84615385|} \cdot 100\% = 0,33333333\%$$

Погрешности результатов вызваны неточным представлением операндов. В формате Ф2 операнды представлены точнее и погрешность меньше.