

Задание 8. Вариант 92

$$A = 2.6$$

$$B = 0.063$$

1. Формат Ф1

$$A = (2.6)_{10} = (2,99999A)_{16} = (0,299999A)_{16} \cdot 16^1$$

0	1	0	0	0	0	0	1	0	0	1	0	1	0	1	0	0
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$$B = (0.063)_{10} = (0,1020C5)_{16} = (0,1020C5)_{16} \cdot 16^0$$

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

$$d + P_C = \frac{P_A + d - P_B - d}{P_C} + d$$

$$X_C = 1 - 0 + 64 = 65$$

$$P_C = 1$$

N шага	Действие	Делимое	Частное
0	M_A	0 0 0 1 0 1 0 1 0	0 0 0 0 0 0 0 0 0
	$[-M_B]_{\text{доп}}$	1 1 1 1 1 0 0 0 0	
	R_0	0 0 0 0 1 1 0 1 0	$R_0 > 0$
	$M_A \rightarrow 4$	0 0 0 0 0 0 0 1 0	1 0 1 0 0 0 0 0
	$[-M_B]_{\text{доп}}$	1 1 1 1 1 0 0 0 0	
	R_0	1 1 1 1 1 0 0 1 0	1 0 1 0 0 0 0 0
1	$\leftarrow R_0$	1 1 1 1 0 0 1 0 1	0 1 0 0 0 0 0 0
	$[M_B]_{\text{пр}}$	0 0 0 0 1 0 0 0 0	
	R_1	1 1 1 1 1 0 1 0 1	0 1 0 0 0 0 0 0
2	$\leftarrow R_1$	1 1 1 1 0 1 0 1 0	1 0 0 0 0 0 0 0
	$[M_B]_{\text{пр}}$	0 0 0 0 1 0 0 0 0	
	R_2	1 1 1 1 1 1 0 1 0	1 0 0 0 0 0 0 0
3	$\leftarrow R_2$	1 1 1 1 1 0 1 0 1	0 0 0 0 0 0 0 0
	$[M_B]_{\text{пр}}$	0 0 0 0 1 0 0 0 0	
	R_3	0 0 0 0 0 0 1 0 1	0 0 0 0 0 0 0 1
4	$\leftarrow R_3$	0 0 0 0 0 1 0 1 0	0 0 0 0 0 0 0 1 0
	$[-M_B]_{\text{доп}}$	1 1 1 1 1 0 0 0 0	
	R_4	1 1 1 1 1 1 0 1 0	0 0 0 0 0 0 0 1 0
5	$\leftarrow R_4$	1 1 1 1 1 0 1 0 0	0 0 0 0 0 1 0 0
	$[M_B]_{\text{пр}}$	0 0 0 0 1 0 0 0 0	
	R_5	0 0 0 0 0 0 1 0 0	0 0 0 0 0 1 0 1
6	$\leftarrow R_5$	0 0 0 0 0 1 0 0 0	0 0 0 0 1 0 1 0
	$[-M_B]_{\text{доп}}$	1 1 1 1 1 0 0 0 0	
	R_6	1 1 1 1 1 1 0 0 0	0 0 0 0 1 0 1 0
7	$\leftarrow R_6$	1 1 1 1 1 0 0 0 0	0 0 0 1 0 1 0 0
	$[M_B]_{\text{пр}}$	0 0 0 0 1 0 0 0 0	
	R_7	0 0 0 0 0 0 0 0 0	0 0 0 1 0 1 0 1

8	$\leftarrow R_7$	0 0 0 0 0 0 0 0 0	0 0 1 0 1 0 1 0
	$[-M_B]_{\text{доп}}$	1 1 1 1 1 0 0 0 0	
	R_8	1 1 1 1 1 0 0 0 0	0 0 1 0 1 0 1 0

$$C^* = (0,2A)_{16} \cdot 16^2 = 42.$$

Определим абсолютную и относительную погрешности результата:

$$\Delta C = 41,26984127 - 42 = -0,73015873$$

$$\delta C = \left| \frac{-0,73015873}{41,26984127} \right| \cdot 100\% = 1,76923077\%$$

2. Формат Ф2

$$A = (2.6)_{10} = (2,99999A)_{16} = (0,10100110011001101)_2 \cdot 2^2$$

0	1	0	0	0	0	0	1	0	0	1	0	0	1	1	0
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$$B = (0.063)_{10} = (0,1020C5)_{16} = (0,1000000100001)_2 \cdot 2^{-3}$$

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

$$d + P_C = \frac{P_A + d - P_B - d}{P_C} + d$$

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

$$P_C = 5$$

N шага	Действие	Делимое	Частное
0	M_A	0 1 0 1 0 0 1 1 0	0 0 0 0 0 0 0 0
	$[-M_B]_{\text{доп}}$	1 0 1 1 1 1 1 1 1	
	R_0	0 0 0 1 0 0 1 0 1	0 0 0 0 0 0 0 1
1	$\leftarrow R_0$	0 0 1 0 0 1 0 1 0	0 0 0 0 0 0 1 0
	$[-M_B]_{\text{доп}}$	1 0 1 1 1 1 1 1 1	
	R_1	1 1 0 0 1 0 0 0 1	0 0 0 0 0 0 1 0
2	$\leftarrow R_1$	1 1 0 0 1 0 0 1 0	0 0 0 0 0 1 0 0
	$[M_B]_{\text{пр}}$	0 1 0 0 0 0 0 0 1	
	R_2	0 0 0 0 1 0 0 1 1	0 0 0 0 0 1 0 1
3	$\leftarrow R_2$	0 0 0 1 0 0 1 1 0	0 0 0 0 1 0 1 0
	$[-M_B]_{\text{доп}}$	1 0 1 1 1 1 1 1 1	
	R_3	1 0 1 0 0 1 0 1 0 1	0 0 0 0 1 0 1 0
4	$\leftarrow R_3$	1 0 1 0 0 1 0 1 0	0 0 0 1 0 1 0 0
	$[M_B]_{\text{пр}}$	0 1 0 0 0 0 0 0 1	
	R_4	1 1 0 0 1 0 1 1 1	0 0 0 1 0 1 0 0
5	$\leftarrow R_4$	1 1 0 0 1 0 1 1 0	0 0 1 0 1 0 0 0
	$[M_B]_{\text{пр}}$	0 1 0 0 0 0 0 0 1	
	R_5	0 0 0 0 1 0 1 1 1	0 0 1 0 1 0 0 1
6	$\leftarrow R_5$	0 0 0 1 0 1 1 1 0	0 1 0 1 0 0 1 0
	$[-M_B]_{\text{доп}}$	1 0 1 1 1 1 1 1 1	
	R_6	1 1 0 1 0 1 1 0 1	0 1 0 1 0 0 1 0
7	$\leftarrow R_6$	1 0 1 0 1 1 0 1 0	1 0 1 0 0 1 0 0
	$[M_B]_{\text{пр}}$	0 1 0 0 0 0 0 0 1	
	R_7	1 1 0 1 1 0 1 1	1 0 1 0 0 1 0 0
	$M_C \rightarrow$		0 1 0 1 0 0 1 0 0

$$C^* = (0,101001)_2 \cdot 2^6 = 41.$$

Определим абсолютную и относительную погрешности результата:

$$\Delta C = 41,26984127 - 41 = 0,26984127$$

$$\delta C = \left| \frac{0,26984127}{41,26984127} \right| \cdot 100\% = 0,65384615\%$$

Погрешности результатов вызваны неточным представлением operandов. В формате Ф2 operandы представлены точнее и погрешность меньше.