

ДЗ 8 Храбров Артём Алексеевич Р3115. Вариант 75

$$A = 7.2$$

$$B = 0.053$$

1. Формат Ф1

$$A = (7.2)_{10} = (7,333333)_{16} = (0,7333333)_{16} \cdot 16^1$$

0	1	0	0	0	0	0	1	0	1	1	1	0	0	1	1
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$$B = (0.053)_{10} = (0,0D9168)_{16} = (0,D9168)_{16} \cdot 16^{-1}$$

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

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

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

$$P_C = 2$$

№ шага	Действие	Делимое	Частное
0	M_A $[-M_B]_{\text{доп}}$ R_0	0 0 1 1 1 0 0 1 1 1 0 0 1 0 0 1 1 1 1 1 0 0 1 1 0 1 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	$\leftarrow R_0$ $[M_B]_{\text{пр}}$ R_1	1 0 0 1 1 0 1 0 0 0 1 1 0 1 1 0 0 1 0 0 0 0 0 1 1 0 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
2	$\leftarrow R_1$ $[-M_B]_{\text{доп}}$ R_2	0 0 0 0 1 1 0 1 0 1 0 0 1 0 0 1 1 1 1 0 1 0 0 0 0 0 1	0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0
3	$\leftarrow R_2$ $[M_B]_{\text{пр}}$ R_3	0 1 0 0 0 0 0 1 0 0 1 1 0 1 1 0 0 1 1 0 1 0 1 1 0 1 1	0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0
4	$\leftarrow R_3$ $[M_B]_{\text{пр}}$ R_4	0 1 0 1 1 0 1 1 0 0 1 1 0 1 1 0 0 1 1 1 0 0 0 1 1 1 1	0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0
5	$\leftarrow R_4$ $[M_B]_{\text{пр}}$ R_5	1 0 0 0 1 1 1 1 0 0 1 1 0 1 1 0 0 1 1 1 1 1 1 0 1 1 1	0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0
6	$\leftarrow R_5$ $[M_B]_{\text{пр}}$ R_6	1 1 1 1 0 1 1 1 0 0 1 1 0 1 1 0 0 1 0 1 1 0 0 0 1 1 1	0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 1
7	$\leftarrow R_6$ $[-M_B]_{\text{доп}}$ R_7	1 1 0 0 0 1 1 1 0 1 0 0 1 0 0 1 1 1 0 1 0 1 1 0 1 0 1	0 1 0 0 0 0 1 0 0 0 1 0 0 0 0 1 1 1
8	$\leftarrow R_7$ $[-M_B]_{\text{доп}}$ R_8	1 0 1 1 0 1 0 1 0 1 0 0 1 0 0 1 1 1 0 1 0 0 1 0 0 0 1	1 0 0 0 0 1 1 1 0 1 0 0 0 0 1 1 1 1

$$C^* = (0,87)_{16} \cdot 16^2 = 135.$$

Определим абсолютную и относительную погрешности результата:

$$\Delta C = 135,8490566 - 135 = 0,8490566$$

$$\delta C = \left| \frac{0,8490566}{135,8490566} \right| \cdot 100\% = 0,625\%$$

2. Формат Ф2

$$A = (7.2)_{10} = (7,333333)_{16} = (0,1110011001100110011)_2 \cdot 2^3$$

0	1	0	0	0	0	0	1	1	1	1	0	0	1	1	0
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$$B = (0.053)_{10} = (0,0D9168)_{16} = (0,110110010001)_2 \cdot 2^{-4}$$

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

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

$$X_C = 3 - (-4) + 128 = 135$$

$$P_C = 7$$

№ шага	Действие	Делимое	Частное
0	M_A	0 1 1 1 0 0 1 1 0	0 0 0 0 0 0 0 0 0
	$[-M_B]_{\text{доп}}$	1 0 0 1 0 0 1 1 1	
	R_0	0 0 0 0 0 1 1 0 1	0 0 0 0 0 0 0 0 1
1	$\leftarrow R_0$	0 0 0 0 1 1 0 1 0	0 0 0 0 0 0 0 1 0
	$[-M_B]_{\text{доп}}$	1 0 0 1 0 0 1 1 1	
	R_1	1 0 1 0 0 0 0 0 1	0 0 0 0 0 0 0 1 0
2	$\leftarrow R_1$	0 1 0 0 0 0 0 1 0	0 0 0 0 0 1 0 0 0
	$[M_B]_{\text{пр}}$	0 1 1 0 1 1 0 0 1	
	R_2	1 0 1 0 1 1 0 1 1	0 0 0 0 0 1 0 0 0
3	$\leftarrow R_2$	0 1 0 1 1 0 1 1 0	0 0 0 0 1 0 0 0 0
	$[M_B]_{\text{пр}}$	0 1 1 0 1 1 0 0 1	
	R_3	1 1 0 0 0 1 1 1 1	0 0 0 0 1 0 0 0 0
4	$\leftarrow R_3$	1 0 0 0 1 1 1 1 0	0 0 0 1 0 0 0 0 0
	$[M_B]_{\text{пр}}$	0 1 1 0 1 1 0 0 1	
	R_4	1 1 1 1 1 0 1 1 1	0 0 0 1 0 0 0 0 0
5	$\leftarrow R_4$	1 1 1 1 0 1 1 1 0	0 0 1 0 0 0 0 0 0
	$[M_B]_{\text{пр}}$	0 1 1 0 1 1 0 0 1	
	R_5	0 1 1 0 0 0 1 1 1	0 0 1 0 0 0 0 0 1
6	$\leftarrow R_5$	1 1 0 0 0 1 1 1 0	0 1 0 0 0 0 1 0 0
	$[-M_B]_{\text{доп}}$	1 0 0 1 0 0 1 1 1	
	R_6	0 1 0 1 1 0 1 0 1	0 1 0 0 0 0 1 1 0
7	$\leftarrow R_6$	1 0 1 1 0 1 0 1 0	1 0 0 0 0 1 1 0 0
	$[-M_B]_{\text{доп}}$	1 0 0 1 0 0 1 1 1	
	R_7	0 1 0 0 1 0 0 0 1	1 0 0 0 0 1 1 1 0
	$M_C \rightarrow$		0 1 0 0 0 0 1 1 1

$$C^* = (0,10000111)_2 \cdot 2^8 = 135.$$

Определим абсолютную и относительную погрешности результата:

$$\Delta C = 135,8490566 - 135 = 0,8490566$$
$$\delta C = \left| \frac{0,8490566}{135,8490566} \right| \cdot 100\% = 0,625\%$$

Погрешности результатов вызваны неточным представлением операндов. В формате Ф1 и Ф2 операнды представлены одинаково точно.