ДЗ №7, вариант 5

A=2,1, B=0,08

**1. Формат Ф1**  
**A = (2.1)10 = (2,19999A)16 = (0,219999A)16 · 161**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 |

**B = (0.08)10 = (0,147AE1)16 = (0,147AE1)16 · 160**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |

SignC = SignA ⊕ SignB.  
XA = PA + d; XB = PВ + d;  
XC = XA + XB – d;

|  |  |  |
| --- | --- | --- |
| PC + d = | PA + d + PB | + d – d. |
| PC |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| XA | = | + |  | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| XB | = |  | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| XA+XB | = | - | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d | = |  | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| XC | = |  |  | 1 | 0 | 0 | 0 | 0 | 0 | 1 |

PC = 1

*таблица1, дз7.xlsx*

XC = XC – 1  
  
С = (0,2B1)16 · 160 = 0,16821289.  
  
Определим абсолютную и относительную погрешности результата:  
ΔС = 0,168 – 0,16821289 = -0,00021289

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| δС = |  | -0,00021289 |  | · 100% = 0,12672061% |
| 0,168 |

**2. Формат Ф2**

**A = (2.1)10 = (2,19999A)16 = (0,10000110011001101)2 · 22**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |

**B = (0.08)10 = (0,147AE1)16 = (0,1010001111011)2 · 2-3**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| XA | = | + |  | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| XB | = |  | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| XA+XB | = | - |  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| d | = |  | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| XC | = |  |  | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

PC = -1

*таблица2, дз7.xlsx*

XC = XC – 1  
  
С = (0,101010111111)2 · 2-2 = 0,16790771.  
  
Определим абсолютную и относительную погрешности результата:  
ΔС = 0,168 – 0,16790771 = 0,00009229

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| δС = |  | 0,00009229 |  | · 100% = 0,05493164% |
| 0,168 |

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