Вариант: 102

1. Выполнить операцию умножения операндов в формате Ф1, используя метод ускоренного умножения мантисс на два разряда множителя.

A=0.33

B=0.085

A=0.547AE14716 \*160

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

B=0.085=0.15C28F5C16\*160

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

Sign*C* = Sign*A* Sign *B.*

*XA* = P*A* + *d*; *XB* = P*В* + *d*;

*XC* = *XA* + *XB* – *d;*

P*C*+ *d* = **P*A* + *d* + P*B***+ *d – d.*

P*C*

***XA***= 1 0 0 0 0 0 0

+

***XB***= 1 0 0 0 0 0 0

***XA+XB*** =1 0 0 0 0 0 0 0

-

***d***  = 1 0 0 0 0 0 0

***XC*** = 1 0 0 0 0 0 0

P*C* = 0.

Schematic

Description automatically generated with medium confidence

2.Выполнить операцию умножения операндов в формате Ф2, используя метод ускоренного умножения мантисс на четыре разряда множителя.

A=0.547AE14716=0.10101000111101011100001010001112 \*2-1

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

B=0.085=0.10101110000101000111101011100 \*2-3

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

Sign*C* = Sign*A* Sign *B.*

*XA* = P*A* + *d*; *XB* = P*В* + *d*;

*XC* = *XA* + *XB* – *d;*

P*C*+ *d* = **P*A* + *d* + P*B***+ *d – d.*

P*C*

***XA***= 0 1 1 1 1 1 1 1

+

***XB***= 0 1 1 1 1 1 0 1

***XA+XB*** = 1 1 1 1 1 1 0 0

-

***d***  = 1 0 0 0 0 0 0 0

***XC*** = 0 1 1 1 1 1 0 0

P*C* = -4.

Timeline

Description automatically generated

6. Сравнить погрешности результатов аналогичных операций для форматов Ф1 и Ф2

формат f1 является более точным, чем формат f2