**Домашнее задание 3. Дискретная математика.**

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**Вариант 7**

**Число A = 107**

**Число B = 15**

1. А = 107, В = 15.

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| *А* > 0, *B* > 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *A*пр. | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |  | 107 |  | 107 |
| *B*пр. | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |  | 15 |  | 15 |
| *C*пр. | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |  | 92 |  | 92 |

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| CF=0, | ZF=0, | PF=1, | AF=1, | SF=0, | OF=0. |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А* < 0, *B* > 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *A*доп. | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |  | -107 |  | 149 |
| *B*пр. | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |  | 15 |  | 15 |
| *C*доп. | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |  |  |  | 134 |
| *C*пр. | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |  | -122 |  |  |

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| CF=0, | ZF=0, | PF=0, | AF=1, | SF=1, | OF=0. |

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| *А* > 0, *B* < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *A*пр. | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |  | 107 |  | 107 |
| *B*доп. | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 |  | -15 |  | 241 |
| *C*пр. | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |  | 122 |  | 122? |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=1, | ZF=0, | PF=0, | AF=1, | SF=0, | OF=0. |
| Для беззнаковой интерпретации результат неверен вследствие возникающего заёма из разряда за пределами формата | | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А* < 0, *B* < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *A*доп. | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |  | -107 |  | 149 |
| *B*доп. | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 |  | -15 |  | 241 |
| *C*доп. | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |  |  |  | 164? |
| *C*пр. | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |  | -92 |  |  |

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| CF=1, | ZF=0, | PF=0, | AF=1, | SF=1, | OF=0. |

Для беззнаковой интерпретации результат неверен вследствие возникающего заёма из разряда за пределами формата.

1. Правило для подбора выглядит следующим образом:

*А + В* > 128, значит 128 – *А < В* < 127

*А* = 107 (неизменно), *В* = 32 (подбираем).

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| *А* < 0, *B* > 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знак. |  | Беззнак. | |
| *A*доп. | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |  | -107 |  | 149 | |
| *B*пр. | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |  | 32 |  | 32 | |
| *C*пр. | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |  | 117? |  | 117 | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=0, | ZF=0, | PF=0, | AF=0, | SF=0, | OF=1. |
| Для знаковой интерпретации результат некорректен вследствие возникающего переполнения | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А* > 0, *B* < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *A*пр. | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |  | 107 |  | 107 |
| *B*доп. | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |  | -32 |  | 224 |
| *C*доп. | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |  |  |  | 139? |
| *C*пр. | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |  | -117? |  |  |

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| --- | --- | --- | --- | --- | --- |
| CF=1, | ZF=0, | PF=1, | AF=0, | SF=1, | OF=1. |

Для знаковой интерпретации результат некорректен вследствие возникающего переполнения, для беззнаковой интерпретации результат некорректен из-за возникающего заёма из старшего разряда

1. Значение числа *В* фиксируем *(В* = 15), а значение *А* подбираем согласно формуле *А + В* = 128, благодаря которой при вычитании из положительного числа отрицательного будет фиксироваться переполнение, а при вычитании из отрицательного числа положительного не будет. Тогда *А* = 113.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А* > 0, *B* < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *A*пр. | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 |  | 113 |  | 113 |
| *B*доп. | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 |  | -15 |  | 241 |
| *C.* | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | -128? |  | 128? |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=1, | ZF=0, | PF=0, | AF=0, | SF=1, | OF=1. |

Результат беззнаковой интерпретации некорректен вследствие возникающего заёма из разряда за пределами формата, для знаковой интерпретации результат некорректен из-за переполнения.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А* < 0, *B* > 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая | |
| *A*доп. | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |  | -113 |  | 143 | |
| *B*пр. | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |  | 15 |  | 15 | |
| *C*. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | -128? |  | 128 | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=0, | ZF=0, | PF=0, | AF=0, | SF=1, | OF=0. |
|  |  |  |  |  |  |

Результаты знаковой и беззнаковой интерпретаций корректны.