**Министерство образования и науки**

**Российской Федерации**

**САНКТ-ПЕТЕРБУРГСКИЙ НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ ИТМО**

Факультет программной инженерии и компьютерной техники

Дисциплина: Дискретная математика

**Домашняя работа №2**

Вариант 93

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Санкт-Петербург

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|  |  |
| --- | --- |
| **A** | **B** |
| 81 | 23 |

1. *А* = 81, *В* = 23.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А* > 0, *B* > 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*пр. | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |  | 81 |  | 81 |
| *B*пр. | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |  | 23 |  | 23 |
| *С*пр. | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |  | 104 |  | 104 |

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| CF=0, | ZF=0, | PF=0, | AF=0, | SF=0, | OF=0. |
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| *А* > 0, *B* < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*пр. | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |  | 81 |  | 81 |
| *B*доп. | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |  | -23 |  | 233 |
| *С*пр. | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |  | 58 |  | 58? |

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

Для БзИ результат неверен вследствие возникающего переноса из старшего разряда. Вес этого переноса составляет 256.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А <* 0, *B >* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*доп. | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |  | -81 |  | 175 |
| *B*пр. | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |  | 23 |  | 23 |
| *С*доп. | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |  |  |  | 198 |
| *С*пр. | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |  | -58 |  |  |

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| --- | --- | --- | --- | --- | --- |
| CF=0, | ZF=0, | PF=1, | AF=1, | SF=1, | OF=0. |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А <* 0, *B <* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*доп. | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |  | -81 |  | 175 |
| *B*доп. | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |  | -23 |  | 233 |
| *С*доп. | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |  |  |  | 152? |
| *С*пр. | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |  | -104 |  |  |

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

1. Правилодля подбора выглядит следующим образом:

*А + В* > 128, значит 127*> B* >128 - *A*, пусть *В* = 27.

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| *А >* 0, *B >* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*пр. | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |  | 81 |  | 81 |
| *B*пр. | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |  | 23 |  | 23 |
| *С*доп. | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |  |  |  | 104 |
| *Спр* | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |  | 152 |  |  |

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

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А <* 0, *B <* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*доп. | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |  | -81 |  | 175 |
| *B*доп. | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |  | -23 |  | 233 |
| *С*пр. | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |  | -104 |  | 152? |

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

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| Для ЗИ результат является некорректным вследствие переполнения формата, для БзИ результат неверен вследствие возникающего переноса из старшего разряда. Вес этого переноса составляет 256 |

Значение числа *В* фиксируем (*В* = 23), а значение *А* подбираем согласно формуле *А + В* = 128, по которой при сложении положительных чисел будет фиксироваться переполнение, а при сложении отрицательных этого не будет. Тогда *А* = 105.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А >* 0, *B >* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*пр. | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |  | 105 |  | 105 |
| *B*пр. | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |  | 23 |  | 23 |
| *С*доп. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | -128? |  | 128 |

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

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| Для ЗИ результат является некорректным вследствие переполнения формата |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А <* 0, *B <* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*доп. | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |  | -105 |  | 151 |
| *B*доп. | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |  | -23 |  | 233 |
| *С*доп. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  | 128? |
| *С*пр. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | -128 |  |  |

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

|  |
| --- |
| Для БзИ результат неверен вследствие возникающего переноса из старшего разряда. |