**Министерство образования и науки**

**Российской Федерации**

**САНКТ-ПЕТЕРБУРГСКИЙ НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ ИТМО**

Факультет программной инженерии и компьютерной техники

Дисциплина: Дискретная математика

**Домашняя работа №3**

Вариант 94

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Санкт-Петербург

2022 г

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A** | | | | **B** | | | | |
| 95 | | | | 13 | | | | |
| 1. *А* > 0, *B* > 0. | | | | | | | | | | | Интерпретации | | | |
|  |  |  |  | |  |  |  |  | |  |  | Знаковая |  | Беззнаковая |
| *А*пр. | 0 | 1 | 0 | | 1 | 1 | 1 | 1 | | 1 |  | 95 |  | 95 |
| *B*пр. | 0 | 0 | 0 | | 0 | 1 | 1 | 0 | | 1 |  | 13 |  | 13 |
| *С*пр. | 0 | 1 | 0 | | 1 | 0 | 0 | 1 | | 0 |  | 82 |  | 82 |

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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 | 1 | 1 | 1 | 1 |  | 95 |  | 95 |
| *B*доп. | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |  | -13 |  | 243 |
| *С*пр. | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |  | 108 |  | 108? |

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

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| Для БзИ результат неверен вследствие возникающего заема из разряда за пределами формата. |

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| *А <* 0, *B >* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*доп. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |  | -95 |  | 161 |
| *B*пр. | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |  | 13 |  | 13 |
| *С*доп. | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |  |  |  | 148 |
| *С*пр. | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |  | -125 |  |  |

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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 |
| *А*доп. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |  | -95 |  | 161 |
| *B*доп. | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |  | -13 |  | 243 |
| *С*доп. | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 |  |  |  | 174? |
| *С*пр. | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |  | -82 |  |  |

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

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| Для БзИ результат неверен вследствие возникающего заема из разряда за пределами формата. |

1. Правилодля подбора выглядит следующим образом:

*А + В* > 128, значит 127 *> B* > 128 - *A*, пусть *В* = 34.

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| *А <* 0, *B >* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*доп. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |  | -95 |  | 161 |
| *B*пр. | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |  | 34 |  | 34 |
| *С*пр. | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  | 129? |  | 127 |

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

Для ЗИ результат неверен вследствие возникающего переполнения

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| *А >* 0, *B <* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*пр. | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |  | 95 |  | 95 |
| *B*доп. | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 |  | -34 |  | 222 |
| *С*доп. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |  |  |  | 129? |
| *С*пр. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  | -127? |  |  |

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

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| Для ЗИ результат является некорректным вследствие переполнения формата, для БзИ результат неверен вследствие возникающего заема из разряда за пределами формата. |

1. Значение числа *В* фиксируем (*В* = 13), а значение *А* подбираем согласно формуле *А + В* = 128, благодаря которой при вычитании из положительного числа отрицательного будет фиксироваться переполнение, а при вычитании отрицательного числа из положительного не будет. Тогда *А* = 115.

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| *А >* 0, *B <* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| *А*пр. | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |  | 115 |  | 115 |
| *B*доп. | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |  | -13 |  | 243 |
| *С*доп. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | -128? |  | 128 |

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

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| Для ЗИ результат является некорректным вследствие переполнения формата, для БзИ результат неверен вследствие возникающего заема из разряда за пределами формата. |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *А <* 0, *B >* 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| *А*доп. | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |  | -115 |  | 141 |
| *B*пр. | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |  | 13 |  | 13 |
| *С*доп. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | -128 |  | 128 |

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

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| Результаты знаковой и беззнаковой интерпретаций корректны. |