Binary representations

I **Codes (direct, inverse, complementary) for signed integers and subunitary numbers. Representation on 16 bits.**

1. +5674
2. +489
3. -945
4. -1897
5. +0,15
6. +11/16
7. -0,45
8. -9/16

Results:

1. $[x]_D$=0|001011000101010, $[x]_I$=0|001011000101010, $[x]_C$=0|001011000101010
2. $[x]_D$=0|000000111101001, $[x]_I$=0|000000111101001, $[x]_C$=0|000000111101001
3. $[x]_D$=1|000001110110001, $[x]_I$=1|111110001001110, $[x]_C$=1|111110001001111
4. $[x]_D$=1|000011101101001, $[x]_I$=1|111100010010110, $[x]_C$=1|111100010010111
5. $[x]_D$=0|001001100110011, $[x]_I$=0|001001100110011, $[x]_C$=0|001001100110011
6. $[x]_D$=0|101100000000000, $[x]_I$=0|101100000000000, $[x]_C$=0|101100000000000
7. $[x]_D$=1|011100110011001, $[x]_I$=1|100011001100110, $[x]_C$=1|100011001100111
8. $[x]_D$=1|100100000000000, $[x]_I$=1|011011111111111, $[x]_C$=1|011100000000000

II **Addition in complementary code (on 8 bits) for signed integers and subunitary numbers:**

9. +19 and +26
10. +94 and -85
11. -46 and +63
12. -84 and -79
13. +0,81 and +0,73
14. +0,51 and -0,76
15. -0,88 and +0,93
16. -0,12 and -0,34

Results:

9. $[19+26]_C$ = 0|0101101
10. $[94-85]_C$ = 0|0001001
11. $[-63+46]_C$ = 1|1101111
12. $[-84-79]_C$ = 0|1011101, overflow
13. $[0,81+0,73]_C$ = 1|1000100, overflow
14. $[0,51-0,76]_C$ = 1|1100000
15. $[-0,88+0,93]_C$ = 0|0000111,
16. $[-0,12-0,34]_C$ = 1|1000110,

III Fixed-point representation on 16 bits, I=9 and F=6:

17. +1045,67 — 0|000010101|101010 !!overflow
    The most significant 2 binary digits from the integer part are lost!
18. +43,12 — 0|000101011|000111
19. -12,03 — 1|000001100|000001
20. -8097,48 — 1|110100001|011110 overflow
    The most significant 4 binary digits from the integer part are lost!

IV **Floating-point representation, single precision, m<1.**

	S	c	,	m
21. +5941,36	0	10001100		01110011010101110000
22. +0,018	0	01111010		00100110111010011110
23. -6948,27	1	10001100		10110010010001000010100
24. -0,071	1	01111100		00100001011010000111001

IV **Floating-point representation, single precision, m>1.**

	S	c	,	m
25. +6948,27	0	10001011		10110010010001000101000
26. +0,041	0	01111010		01001111110111110011101
27. -2914,73	1	10001010		01101100010101110101110
28. -0,009	1	01111000		00100110111010010111100