

# HW 3

$$1) 9_{10} = 64 + 16 + 8 + 2 + 1 = 1011011$$

$$C_9 = 13 \times 16 + 6 = 214 = 128 + 64 + 16 + 4 + 2$$

11010110

1011011

+ 11010110

100110001

$$286 + 32 + 16 + 1 = 305$$

$$2) 11_8 = 8 + 1 = 10001$$

$$11_{10} = 10 + 1 = 8 + 2 + 1 = 1011 - 11_{10} = \overline{01011} + 1 = 10100 + 1 = 10101$$

01001

+ 10101

$$11110 = -\overline{11110} - 1 = -\overline{11101} = 00010 = -2$$

$$3) 12.3125_{10} = 8 + 4 + \frac{1}{2} + \frac{1}{16} = 1100.0101$$

1100.0101

+ 0001.1000

1101.1101

$$8 + 4 + \frac{1}{2} + \frac{1}{16} + \frac{1}{16} = 13.8125$$

$$5) 9_{10} = 100$$

$$3_{16} = 0011$$

1001

- 0011

1001

10010

11011

$$= 16 + 8 + 2 + 1 = 27$$

$$6) -5_{10} = \overline{0101} + 1 = 11011$$

$$-6_{10} = \overline{0110} + 1 = 1010$$

$$30 = 16 + 8 + 4 + 2$$

0110  
0101

0110

10110

011000

11011110 = 30

1001110

$$3 + 4 + 2 = 14$$

$$7) 9.5 = 1001.100$$

$$2.625 = 10.101$$

1001.100

10.101

1001.100

0

100110.000

10011000.000

10011000.000

11000.111100

$$16 + 8 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} = 24.9375$$