

COMP114, Homework #1.

Due Tuesday, January 22 at the beginning of class.

1. Convert the following numbers to the other formats (5 points each, total 50)

a. Decimal 2002 Binary 11111010010 Hex 0x 7D2

b. Decimal 1445 Binary 10110100101 Hex 0x 5A5

c. Decimal 291 Binary 100100011 Hex 0x 123

d. Decimal 114 Binary 1110010 Hex 0x 72

e. Decimal 427 Binary 110101011 Hex 0x 1ab

2. What is the result of the following arithmetic expressions (total 8 points each, total 24)

- a. Binary (write answer as binary)

$$11001 + 111 = \underline{100000}$$

$$10010 + 11 = \underline{10101}$$

- b. Hex

$$0x1c + 0xa = \underline{0x26}$$

3. Unicode (www.unicode.org) is a way to encode characters. Java uses the 16-bit Unicode format that is designed to represent a variety of international character sets. The code for a 'J' is 0x4a, for 'a' it's 0x61, and 'v' it's 0x76 (see www.unicode.org/charts/PDF/U0000.pdf). (4 points each, total 24)

- a. What are the decimal and binary representations of the Unicode characters 'J', 'a', and 'v'?

	<u>Decimal</u>	<u>Binary</u>
'J'	74	1001010
'a'	97	1100001
'v'	118	1110110