**INFSCI 0010 HW2 Binary Numbers**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**True or False – Two points each**

1. \_\_\_\_ There are only four bases: Base2, Base8, Base10 and Base16

2. \_\_\_\_When converting from Base2 to Base 16 it is best to group the Base2 numbers into groups of 8

3. \_\_\_\_ If a person used sticks in a Hash Based counting system they could easily represent a thousand things.

4. \_\_\_\_ In a 4 bit computer there would be the capacity to show 8 variations of color.

5. \_\_\_\_ A zero is not considered a number because it represents nothing.

**Problems**

**6. Convert From Base 2 to Base 10 -- Two Points Each**

a. 0 Ans\_\_\_\_\_\_\_\_\_\_\_

b. 10 Ans\_\_\_\_\_\_\_\_\_\_\_

c. 1011 Ans\_\_\_\_\_\_\_\_\_\_\_

d. 00001111 Ans\_\_\_\_\_\_\_\_\_\_\_

e. 11110000 Ans\_\_\_\_\_\_\_\_\_\_\_

**7. Represent the Base 10 number in Base 2 Two Points Each**

a. 0 Ans\_\_\_\_\_\_\_\_\_\_\_

b. 5 Ans\_\_\_\_\_\_\_\_\_\_\_

c. 10 Ans\_\_\_\_\_\_\_\_\_\_\_

d. 47. Ans\_\_\_\_\_\_\_\_\_\_\_

e. 129 Ans\_\_\_\_\_\_\_\_\_\_\_

**8. Convert from Base 2 to Base 16 Two Points Each**

a. 1011001110001111 Ans\_\_\_\_\_\_\_\_\_\_

b. 0101111110001010 Ans\_\_\_\_\_\_\_\_\_\_

c. 111111111111111111111111 Ans\_\_\_\_\_\_\_\_\_\_

**9. Convert from Base 16 to Base 10 Two Points Each**

a. F Ans\_\_\_\_\_\_\_\_\_\_

b. 1A1 Ans\_\_\_\_\_\_\_\_\_\_

c. 1FF Ans\_\_\_\_\_\_\_\_\_\_

**10. Add together the following binary numbers. Two Points Each**

a.

101

101

011

111

110

Ans\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b.

10111

01010

00011

Ans\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_