**M&L Test 3: Number Systems Conversions Name : Davis Klevgard**

**For items 1-2, write each number in expanded form, and convert to decimal. Write all of the digits of the decimal number, do not round.**

**1.** 110**.**1110 012

(1 \* ) + (1 \* )+ (0 \* )+ (1 \* )+ (1 \* )+ (1 \* )+ (1 \* )+ (1 \* )+ (1 \* )

4 + 2 + 0 + .5 + .25 + .125 + .0625 + .03125 + .015625 = 6.890625

**2.** 4 53**.**D916

(4 \* )+ (5 \* )+ (3 \* )+ (13 \* )+ (9 \* )

1024 + 80 + 3 + .8125 + .035156250 = 1107.84765625

**For items 3-4, convert from decimal to binary. Show/explain your process.**

**3.** 10810

108-64 = 44

44-32 = 12

12-8 = 4

4-4 = 0

108 = 01101100

**4.** 11**.**9510

11.95 \* = 3095

3095/2 = 1529 R1

1529/2 = 764 R1

764/2 = 382 R0

382/2 = 191 R0

191/2 = 95 R1

95/2 = 47 R1

47/2 = 23 R1

23/2 = 11 R1

11/2 = 5 R1

5/2 = 2 R1

2/2 =1 R0

1/2 = 0 R1

1011.11110011

**For items 5-6, convert from decimal to hexadecimal. Show/explain your process.**

**5.** 980510

9805/16 = 612 R13

612/16 = 38 R4

38/16 = 2 R6

2/16 = 0 R2

9805 = 264D

**6.** 176**.**3437510

176.34375 \* = 45144

45144/16 = 2821 R8

2821/16 = 176 R5

176/16 = 11 R0

11/16 = 0 R11

11 = B

176.34375 = B0.58

**For items 7-8, convert from binary to hexadecimal.**

**7.** 10 1110 01002

0010 = 2

1110 = 14

0100 = 4

14 = E

2E4

**8.** 1101 0011**.** 1011 112

1101 = 13 = D

0011 = 3

1011 = 11 = B

1100 = 12 = C

11010011.10111100 = D3.BC

**For items 9-10, convert from hexadecimal to binary.**

**9.** F**.**516

F = 15

15 = 1111

5 = 0101

F.5 = 1111.0101

**10.** 7E**.**1A16

7 = 0111

E = 14

14 = 1110

1 = 0001

A = 10

10 = 1010

7E.1A = 1111110.00011010