cisc1110, fall 2010, assignment for unit IV, part 1

Name: _____

This is part 1 of the assignment for unit IV. This is a written assignment, to be started (and possibly completed) in class on Thursday Sep 30. It is due on TUESDAY OCT 5. This assignment is worth **2 points**.

Write your work on this page and turn it in. Don't forget to put your name on it!

Although you could do these using a calculator (or a computer), you should do them by hand. Because that is how you will be asked to do them on the midterm and on the final exam (where you will not be allowed to use a calculator).

A. Convert the following values from base 10 to base 2. Use the boxes to show how each binary value is stored in the computer.

1. 19 in base 10 = ⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜ in base 2

2. 32 in base 10 = ⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜ in base 2

3. 1 in base 10 = ⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜ in base 2

4. 25 in base 10 = ⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜ in base 2

5. 12 in base 10 = ⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜ in base 2

B. Convert the following values from base 2 to base 10.

1. **11** in base 2 = ⬜ in base 10

2. **100** in base 2 = ⬜ in base 10

3. **10010** in base 2 = ⬜ in base 10

4. **1001** in base 2 = ⬜ in base 10

5. **100110** in base 2 = ⬜ in base 10

C. Convert the following values from base 10 to base 8.

1. **8** in base 10 = ⬜ in base 8

2. **32** in base 10 = ⬜ in base 8

3. **33** in base 10 = ⬜ in base 8

4. **64** in base 10 = [＿＿＿＿＿＿] in base 8

5. **100** in base 10 = [＿＿＿＿＿＿] in base 8

D. Convert the following values from base 8 to base 10.

1. **40** in base 8 = [＿＿＿＿＿＿] in base 10

2. **1** in base 8 = [＿＿＿＿＿＿] in base 10

3. **11** in base 8 = [＿＿＿＿＿＿] in base 10

4. **101** in base 8 = [＿＿＿＿＿＿] in base 10

5. **77** in base 8 = [＿＿＿＿＿＿] in base 10

E. Convert the following values from base 10 to base 16.

1. **32** in base 10 = [＿＿＿＿＿＿] in base 16

2. **1** in base 10 = [＿＿＿＿＿＿] in base 16

3. **40** in base 10 = [＿＿＿＿＿＿] in base 16

4. **18** in base 10 = [＿＿＿＿＿＿] in base 16

5. **100** in base 10 = [＿＿＿＿＿＿] in base 16

F. Convert the following values from base 16 to base 10.

1. **10** in base 16 = [＿＿＿＿＿＿] in base 10

2. **101** in base 16 = [＿＿＿＿＿＿] in base 10

3. **16** in base 16 = [＿＿＿＿＿＿] in base 10

4. **AF** in base 16 = [＿＿＿＿＿＿] in base 10

5. **3D** in base 16 = [＿＿＿＿＿＿] in base 10

G. Convert the following values from base 2 to base 16.

1. **1** in base 2 = [ ] in base 16

2. **100** in base 2 = [ ] in base 16

3. **1111** in base 2 = [ ] in base 16

4. **1001** in base 2 = [ ] in base 16

5. **101** in base 2 = [ ] in base 16

H. Convert the following values from base 16 to base 2.

1. **10** in base 16 = [ ] in base 2

2. **A** in base 16 = [ ] in base 2

3. **AB** in base 16 = [ ] in base 2

4. **2F** in base 16 = [ ] in base 2

5. **11** in base 16 = [ ] in base 2

J. Convert the following values from base 2 to base 8.

1. **10** in base 2 = [ ] in base 8

2. **1** in base 2 = [ ] in base 8

3. **111** in base 2 = [ ] in base 8

4. **101** in base 2 = [ ] in base 8

5. **1000** in base 2 = [ ] in base 8

K. Convert the following values from base 8 to base 2.

1. **40** in base 8 = [ ] in base 2

2. **1** in base 8 = [   ] in base 2

3. **7** in base 8 = [   ] in base 2

4. **17** in base 8 = [   ] in base 2

5. **42** in base 8 = [   ] in base 2