**ECE 2201 – Circuit Analysis**

**Homework #4**

1. This problem comes from Dr. Shattuck’s computer-assisted learning project, which is found on the web at <http://courses.egr.uh.edu/ECE/ECE2201/Dr_Dave_Project/>. When you find the directory, do the following.

Next slide

1. Open the file *DPKC\_Mod01\_Part01\_v07.ppt* which can be found by clicking on the link marked Module01, and view the slide show found there. This is best done by putting the presentation in Slide Show Mode: from the menu, click on “Slide Show”, and then “View Show”. Clicking the mouse or pressing the space bar will take you through the slide show. Based on what you have seen, write one or two sentences to answer the question, “Why bother with Reference Polarities?” Remember that it is **unacceptable** to copy anything directly from Dr. Dave’s slides. You must use ***your own words*** in giving this answer.
2. Open the file PWA\_Mod01\_Prob03\_v05.ppt which can be found by clicking on the link marked Module01, and view the slide show found there. Again, this is best done by putting the presentation in Slide Show Mode. You will be directed toward the solution by a series of questions. Answer the questions as they are presented, and write down the solution you arrive at.

2. Use the circuit in Figure P4.2 to solve for the numerical values of the quantities requested.

a) Find *vX*.

b) Find the power delivered by the *iS1* current source.

c) Find the power absorbed by the *vS3* voltage source.



Figure P4.2

3. Use the circuit shown in Figure P4.3 to find the indicated quantities.

1. Find *vX*.
2. Find the power delivered by the *vS4* voltage source.



Figure P4.3

4. Use the circuit shown in Figure P4.4 to find the indicated quantities.

a) Find the power delivered to the circuit by the voltage source *vS1*.

b) Find the power delivered to the circuit by the dependent current source *iS1*.



Figure P4.4

5. Use the circuit below to solve this problem.

a) Find *vQ*.

b) Find *vX*.

c) Find the power delivered by the current source.



6. Use the circuit given below to solve for the numerical quantities requested.

a) Find the equivalent resistance of this circuit as seen from terminals A and B.

b) Find the equivalent resistance of this circuit as seen from terminals A and C.



7. Use the circuit given below to solve for the numerical quantities requested.

a) Find the equivalent resistance of this circuit with respect to terminals A and B.

b) Find the equivalent resistance of this circuit with respect to terminals A and C.



**Numerical Solutions**

1. Solution omitted.

2. a) *vX* = -6.40[V], b) 59.1[W], c) -48.4[W]

3. a) -4.65[V], b) 198[W]

4. a) 3.41 [W], b) 0.632 [W]

5. a) -5.96[V], b) 12.1[V], c) -3.93[mW]

6. Solution omitted

7. Solution omitted