EE 261-Electrical Circuits-3 cr. hrs.
Fall 2003

Midterm Exam # 1
(Monday, September 22, 2003)
(Closed Book Exam, One Formula Sheet is Allowed)
(Total Time: 55 minutes)

Name: ____________________________

Signature: ________________________

“An honest mind possesses a kingdom.”
Lucius Annaeus Seneca (4B.C.–65A.D.)

“Honest people are the true winners of the universe.”
Anonymous
NOTE: On all the problems, please show your work clearly, and provide the appropriate units for your answers. Also mark on the schematic to show any current or voltage that you define in your solution.

1. (25 points) In the circuit shown, find the power supplied by each independent source. (Answer: +1.25 W (absorbed by the current source) and – 5 W (supplied by the voltage source).)
2. (25 Points) Consider the circuit show below that contains a digital multimeter (DMM) that can be set to measure voltage (in which case it behaves like an ideal voltmeter) or to measure current (in which case it behaves like an ideal ammeter).

```
\[ \begin{array}{c}
\text{DMM} \\
\end{array} \]
```

a) Find the DMM reading if it is set to measure voltage, and indicate the units. (Answer: 4 V.)

b) Find the DMM reading if it is set to measure current, and indicate the units. (Answer: 2.45 mA.)
3. (25 Points) Consider the circuit shown. Determine the power absorbed by each voltage source. (Answer: +32 mW and – 4 mW.)
4. (25 Points) Find the voltage $V_{out}$ in the circuit shown. (Answer: 3 V.)