6. If $v_1 = 0.9 \, \text{V}$, $v_2 = 0.2 \, \text{V}$, $v_4 = 0.4 \, \text{V}$ in the circuit below, what is $v_5$?
   a. 0.3 V
   b. 0.5 V
   c. 0.9 V
   d. 1.1 V
   e. 1.5 V

7. If $i_2 = 10 \, \text{mA}$, $i_3 = 6 \, \text{mA}$, $i_6 = 4 \, \text{mA}$ in the circuit below, what is $i_5$?
   a. 0 mA
   b. 8 mA
   c. 12 mA
   d. 16 mA
   e. 20 mA

15. How much power is being absorbed by the 3 $\Omega$ resistor if the 6 $\Omega$ resistor is absorbing 60 W?
   a. 20 W
   b. 30 W
   c. 60 W
   d. 90 W
   e. 120 W
12. What are the voltages $V_I$ and $V_S$ in the circuit below, if $V_2 = 6\ V$?

a. $V_I = 3\ V$ and $V_S = 3\ V$
b. $V_I = 3\ V$ and $V_S = 9\ V$
c. $V_I = 6\ V$ and $V_S = 12\ V$
d. $V_I = 9\ V$ and $V_S = 15\ V$
e. $V_I = 12\ V$ and $V_S = 18\ V$
12. Find the value of current $I$.

![Circuit Diagram]

a. 2 mA  
b. 4 mA  
c. 6 mA  
d. 8 mA  
e. 12 mA
3. What happens to the energy stored in a capacitor, if the capacitor loses half of its charge, while its capacitance remains the same? (Hint: consider what happens to the voltage across the capacitor)

   a. Stays the same
   b. Decreases to 70% of original
   c. Decreases to 50% of original
   d. Decreases to 25% of original
   e. Decreases to 12% of original

8. Imagine we cook an egg by immersing it into water which is boiled by an electric heater. The heater utilizes a current, $I$, at a voltage, $V$, for a time, $T$. If the change in energy of a newly cooked egg over its raw energy is given by $\Delta E_{egg}$, the energy wasted in the cooking process is given by which equation below?

   a. $E_{wasted} = IV$
   b. $E_{wasted} = IV + \Delta E_{egg}$
   c. $E_{wasted} = IV - \Delta E_{egg}$
   d. $E_{wasted} = IVT + \Delta E_{egg}$
   e. $E_{wasted} = IVT - \Delta E_{egg}$