Problem Number one } Charge (flow)  
Look at Problem 1.13 for which the answer is supplied.  
Hambley Problem 1.14

Problem Number two } Power and voltage and current references  
Hambley Problem 1.24

Problem Number three } Ideal voltmeter and ammeter  
Hambley Problem 1.27

Problem Number four } Power and Energy  
Hambley Problem 1.30

Problem Number five } KVL and KCL  
a) Hambley Problem 1.68 Part c)  
b) The voltage source is replaced by a time varying voltage \( v(t) \) and the 4 Ω resistor is replaced by an element having 4 \( \rho \) Ohms where \( \rho = \frac{d}{dt} \) (This is actually a coil). Obtain a differential equation for the current through the voltage source (current in at the + reference). Leave the answer in terms of \( R_x \). (Note that you cannot assume that the current through the 6 Ω resistor is 1 A)

Problem Number six } KVL and KCL  
Hambley Problem 2.22 For part a do the problem as worded  
b) Do this problem also by first converting the voltage source and the 12 and 6 Ohm resistors to a Norton equivalent and using the node equations for \( v_1 \) and \( v_2 \).

Problem Number seven } Ideal versus a real source  
Eight flashlight batteries are connected in a row with + connected to - for each battery leaving the initial - (A terminal) and the final + (B terminal) unconnected. Thus the total
voltage $V_{BA}$ is 12 V (just the sum [by KVL]). This is the same as a car battery voltage (12 V). To form a "spark" I touch terminals A and B of the line of 1.5 V batteries. Why would I not want to do this with the car battery? The obvious reason is that I get a "much more intense" spark. But why?