# CECS 211 - LAB 3
## Series and Parallel, Equivalent Resistances

NAME: POSSIBLE POINTS: 10

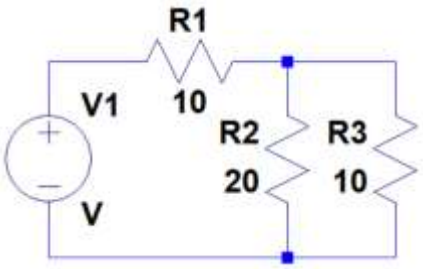
STUDENT ID:

COURSE DATE & TIME:

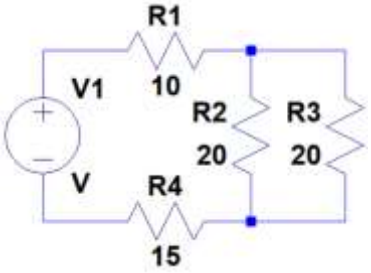
DIRECTIONS:

Solve the following circuits by hand, write the answers on the lab and staple the handwritten work with the lab when you submit the write-up. You may round resistances to 2 decimal points of precision.

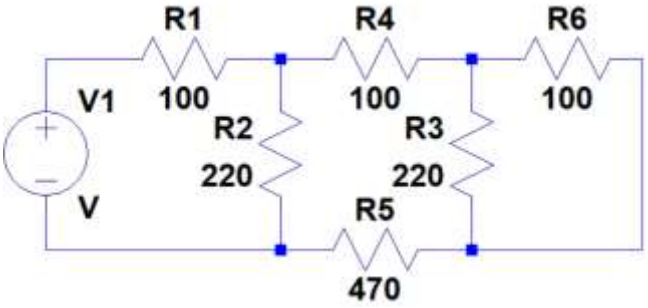
1) Find the Total/Equivalent Resistance - Rt for the following circuits:



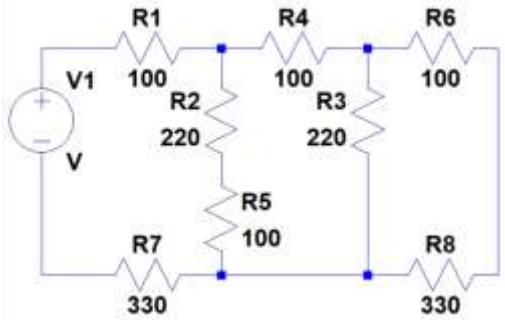

Rt = _____




Rt = _____




Rt = _____




Rt = _____

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2) For each of the figures, find the Total/Equivalent Resistance - Rt between points A and B.

Figure 1

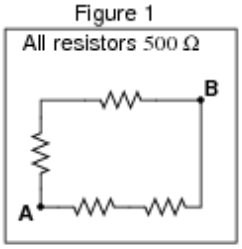



Figure 2

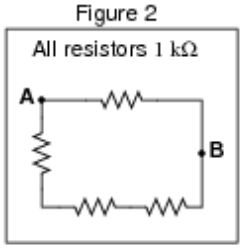



Figure 3

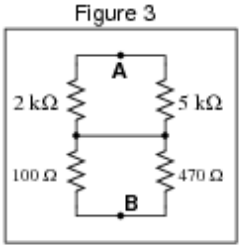



Figure 4

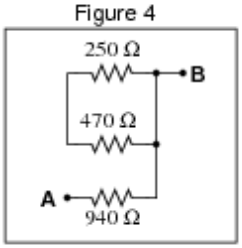



Figure 5

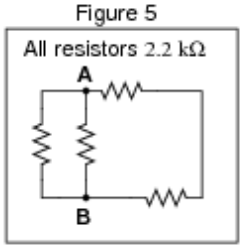
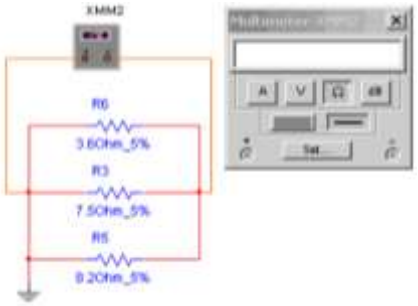
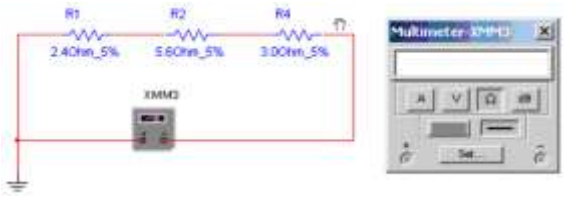



Figure 1: Rt = _____ Figure 4: Rt = _____
Figure 2: Rt = _____ Figure 5: Rt = _____
Figure 3: Rt = _____

3) Calculate the reading on the Digital MultiMeter – DMM. Note that the button on the multimeter selects the property (Voltage, Resistance, Current) being measured. Also note that in order to measure Resistance we do not have a power supply attached to our circuit (there is no Supply Voltage (Vs)). In a real circuit under test the same would be true, power would have to be disconnected. Ignore the 5% next to the value on each component/resistor.




DMM Measured Resistance: _____ DMM Measured Resistance: _____

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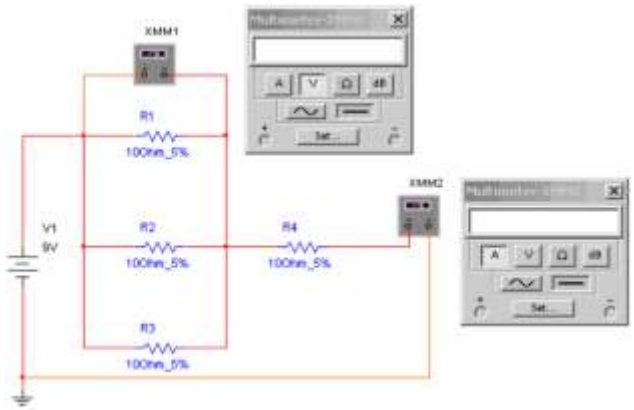
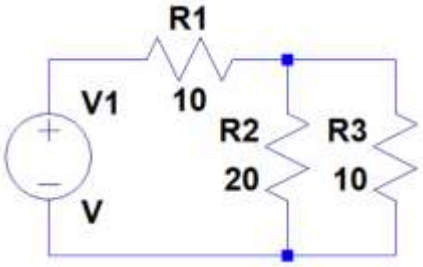
3) Calculate the readings on the two DMMs for the following circuit. Note that in order to measure current with a DMM, we must cut the wire and insert our DMM in series. In other words XMM2 (The 2nd Multimeter measuring Current) is completing the circuit between R4 and the negative side of our DC voltage source.

a) Voltage:_____ b) Current:_____




1) Calculate Current and Voltage for all resistors in the following circuits, you may round to 2 decimal points:

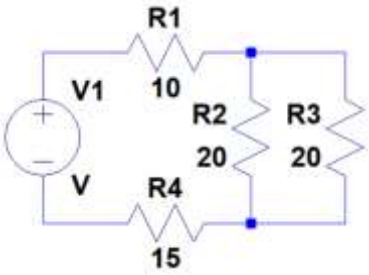



V1 = 12v

$V_{R1}$ = _____ $I_{R1}$ = _____

$V_{R2}$ = _____ $I_{R2}$ = _____

$V_{R3}$ = _____ $I_{R3}$ = _____



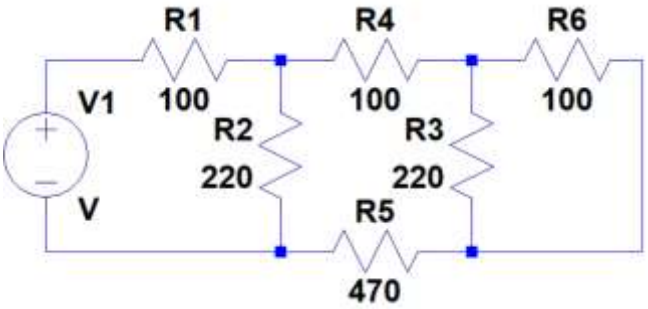

V1 = 35v

$V_{R1}$ = _____ $I_{R1}$ = _____

$V_{R2}$ = _____ $I_{R2}$ = _____

$V_{R3}$ = _____ $I_{R3}$ = _____

$V_{R4}$ = _____ $I_{R4}$ = _____




V1 = 100v

$V_{R1}$ = _____ $I_{R1}$ = _____

$V_{R2}$ = _____ $I_{R2}$ = _____

$V_{R3}$ = _____ $I_{R3}$ = _____

$V_{R4}$ = _____ $I_{R4}$ = _____

$V_{R5}$ = _____ $I_{R5}$ = _____

$V_{R6}$ = _____ $I_{R6}$ = _____