

Faculty of Engineering and Technology

Electrical and Computer Engineering Department

ENEE2110

ELECTRIC CIRCUITS LAB

Experiment.4 Prelab

**NETWORK THEOREMS**

**Prepared by:**

Nermin Aqra 1212126

**Supervised by:**

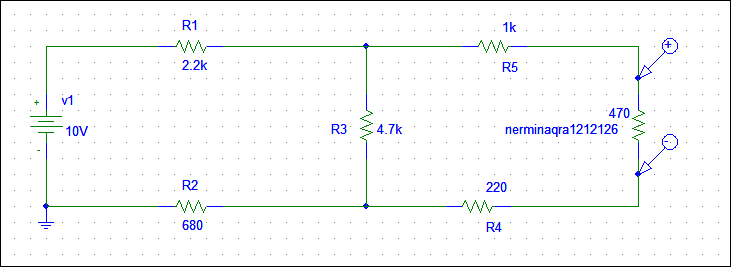
Dr. Jaser Sa'ed

**Teacher assistance:**

Eng.Mohammad AL-Battat

March2025

**Part A: Proportionality**

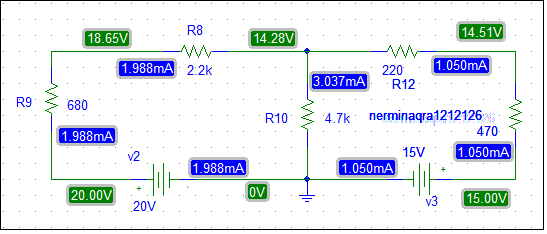


**Figure 1:4.1**

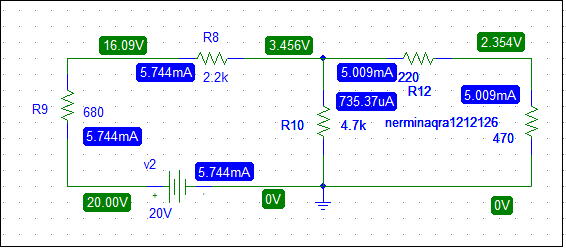


**Figure 2:Vo FOR A Vin SWAAP FROM 0 to 15**

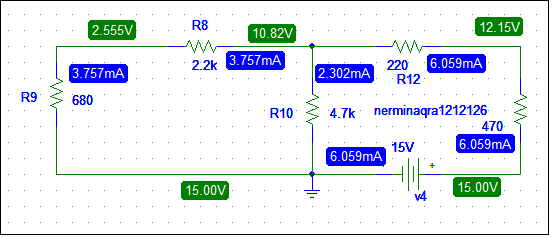
**Part B:Superposition**



**Figure 3:4.2**

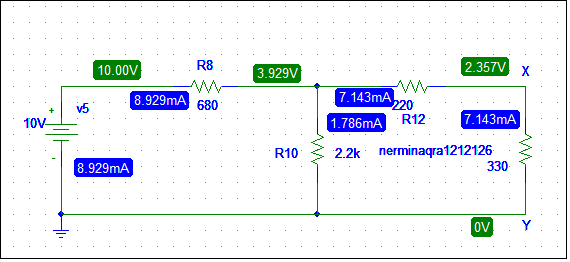


**Figure 4:4.3**



**Figure 5:4.4**

**Part C: Thevenin’sTheorem**

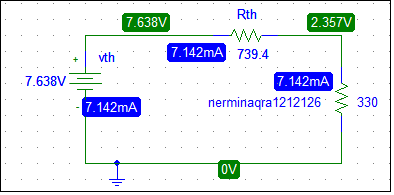


**Figure 6:4.5**

Voltage around the resistor 330 = 2.357volt

Current around the resistor 330=7.143mA

* Find the Thevenin equivalent
* To Find Vth using voltage divider
* To Find Rth killing DC voltage source

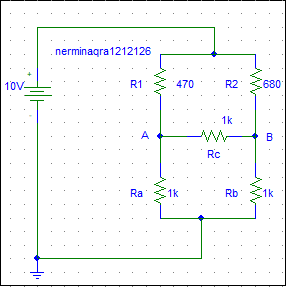


**Figure 7:4.7**

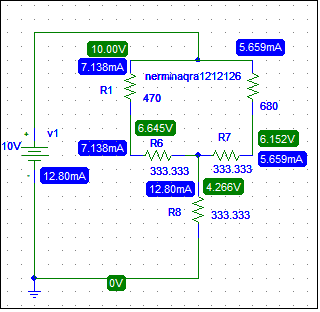
Voltage around the resistor 330 = 2.357volt

Current around the resistor 330 = 7.142mA

**Patr D:** **∆-Y Transformation**

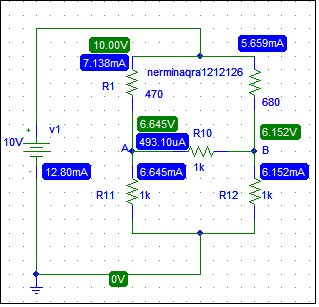


We note that Ra=Rc=Rb=1K so R1=R2=R3=333.333ohm



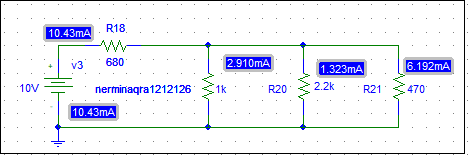
**Figure 8:Y transformation**

the voltage Vab=0.493volt && the current I=12.80mA



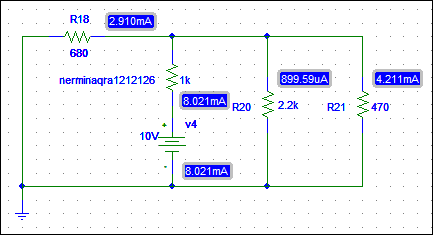
**Figure 9: ∆ transformation**

**Part E:Reciprocity Theorem**



**Figure 10:4.8**

the current I=2.910mA



**Figure 11:4.9**

the current I=2.910mA