EE 206 Test #2c - Name _____

Thevenin Equivalents - Max Power Transfer - Superposition - Operational Amplifiers. April 27, 2020

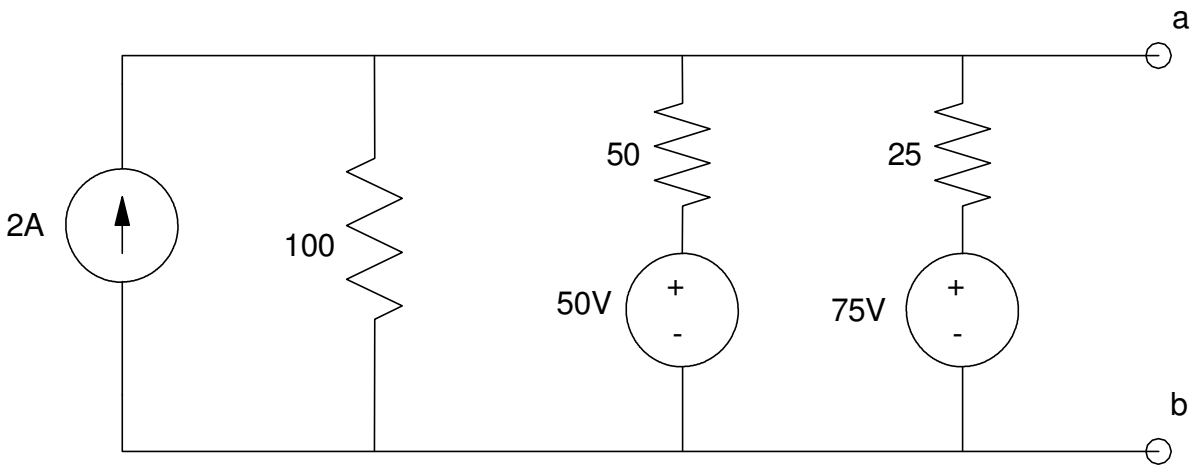
Due Tuesday, April 28th at midnight (solutions posted on Wednesday)

Open book, open notes, internet, calculators, matlab permitted. Individual effort only.

No aid given, received, or observed: (signature) _____

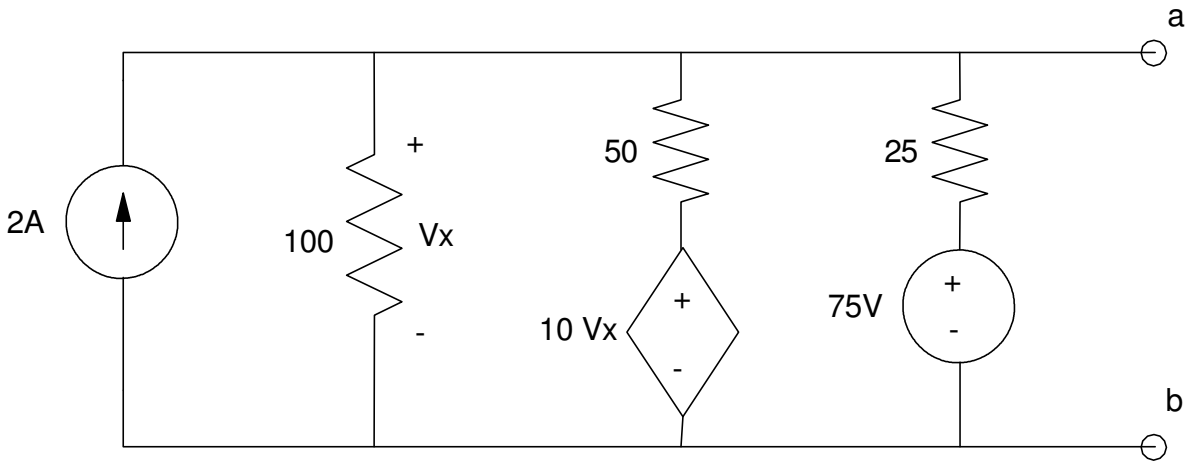
1) Determine the Thevenin equivalent for the following circuit.

Vth	Rth



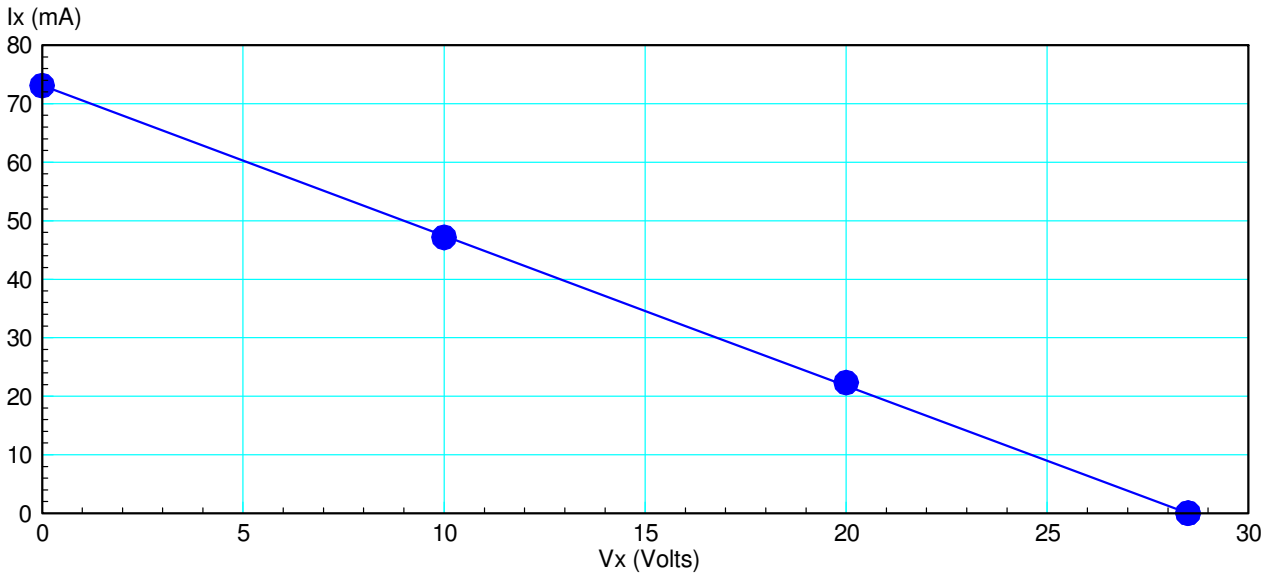
2)Determine the Thevenin equivalent for the following circuit

Vth	Rth



3) A resistor (R) is placed across the output of a circuit. The voltage and current through the resistor is then measured:

R	0 Ohms	100 Ohms	200 Ohms	infinity
V	0V	10V	20V	28.5V
I	73 mA	47.4 mA	21.8 mA	0 mA

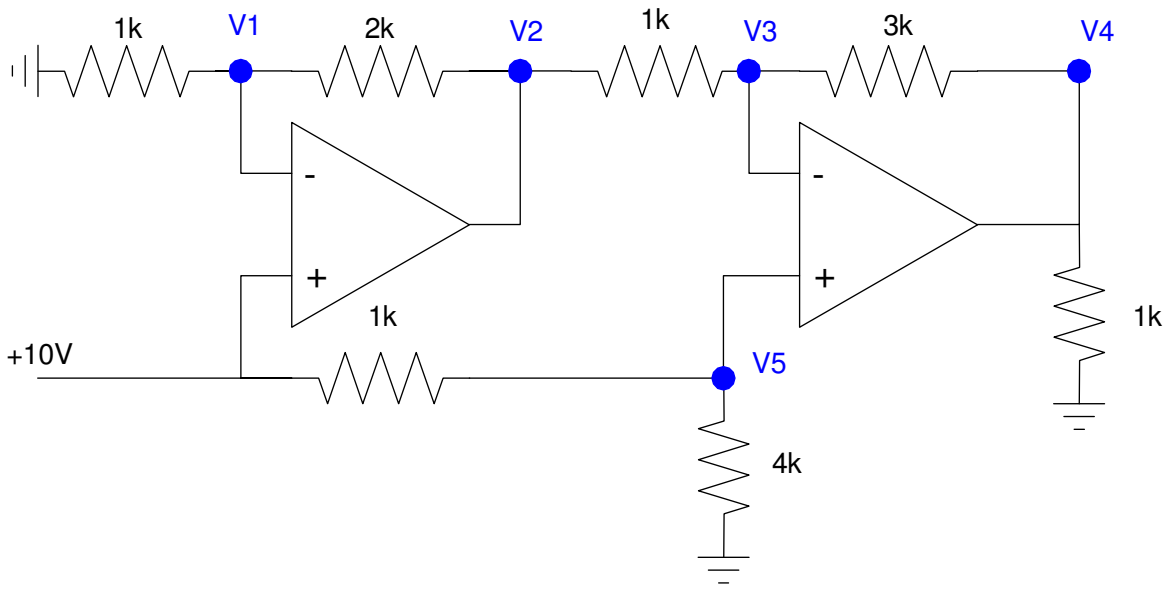


From this data, determine the Thevenin equivalend and the maximum power you can get out of this circuit.

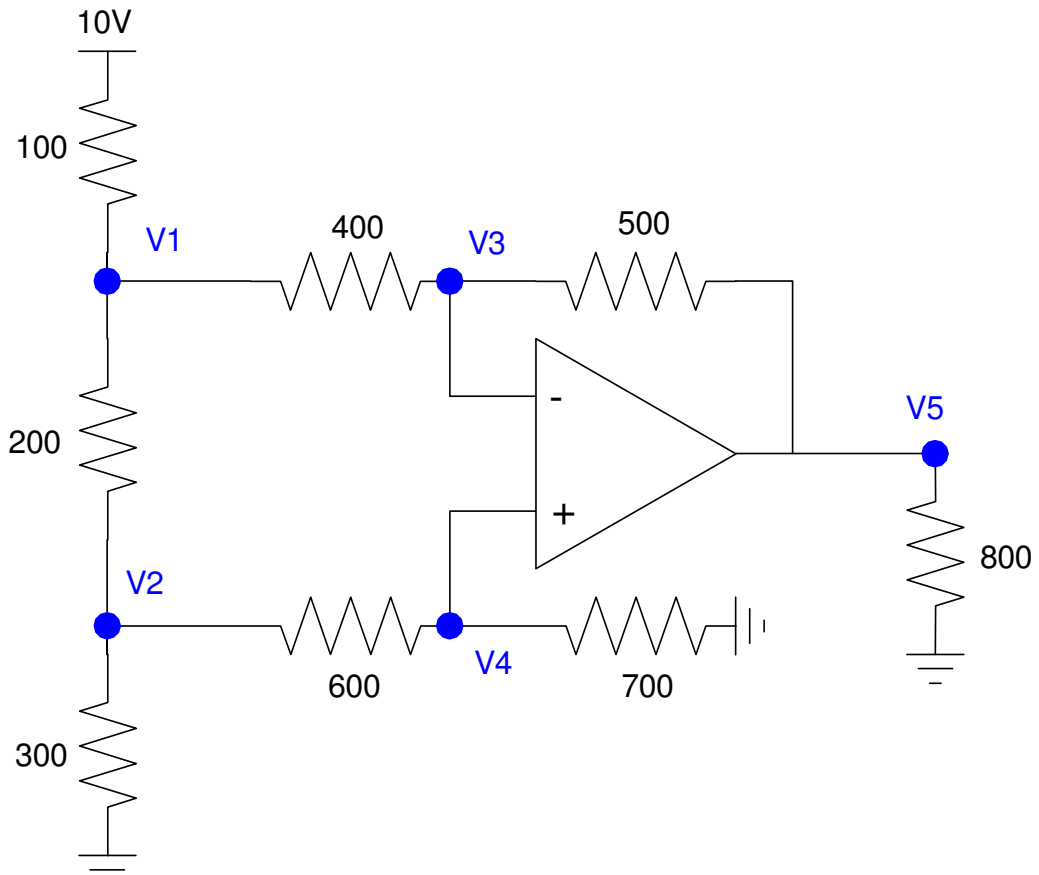
Vth	Rth	R for maximum power transfer	Max power to R

4) Determine the voltages for the following op-amp circuit. Assume ideal op-amps.

V1	V2	V3	V4	V5



5) Write the voltage node equations for the following circuit. Assume ideal op-amps.



6) Design a circuit which outputs

- Y = +10V when R = 650 Ohms
- Y = -10V when R = 750 Ohms
- Y is proportional to R for 650 < R < 750 Ohms