EE 206 Test #2d - Name _____

Thevenin Equivalents - Max Power Transfer - Superposition - Operational Amplifiers

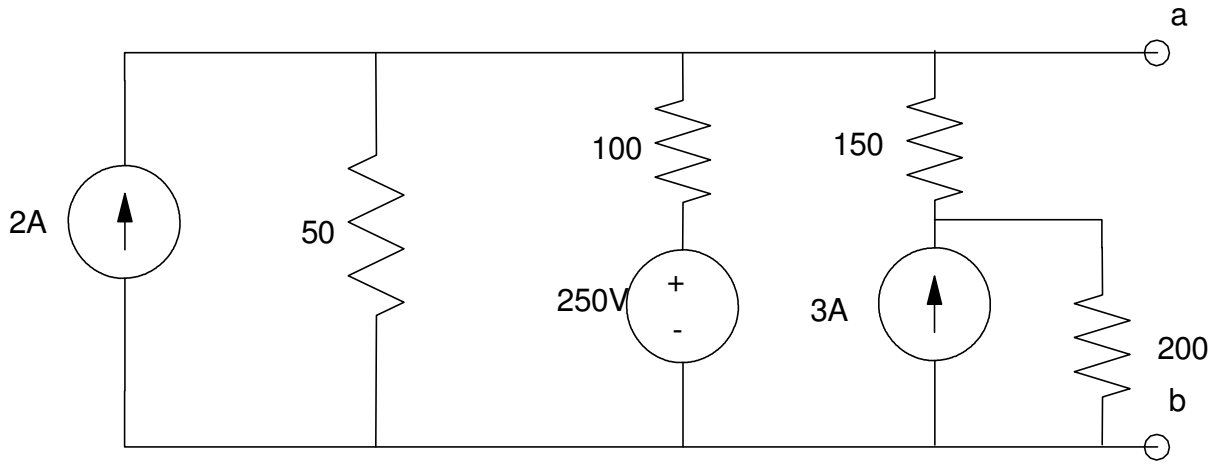
Due Thursday, May 7th at midnight

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

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

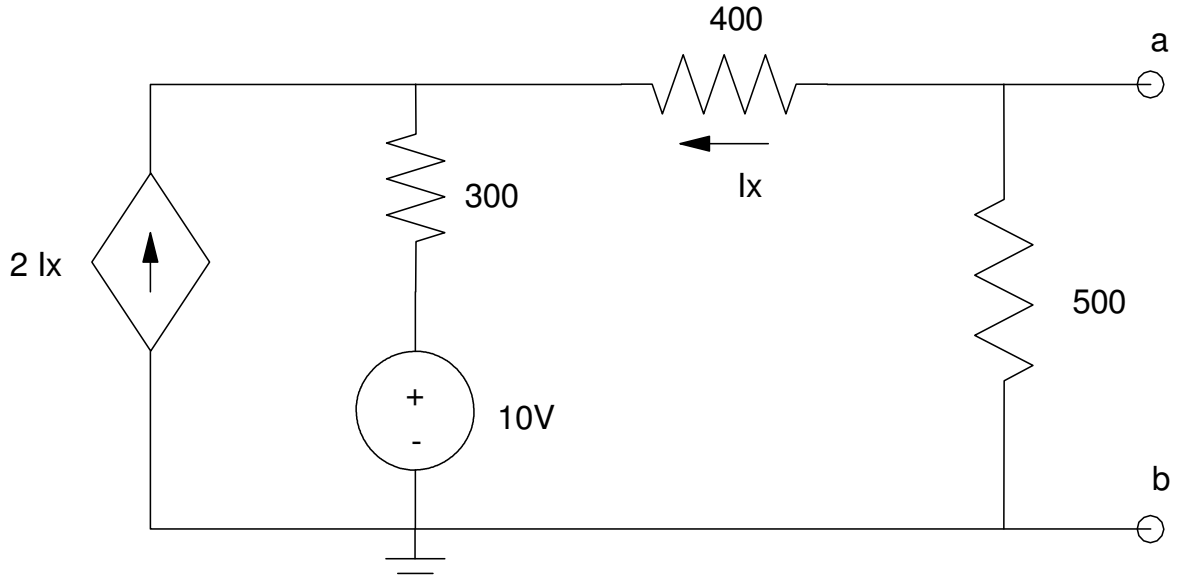
1) Determine the Thevenin equivalent for the following circuit.

Vth	Rth



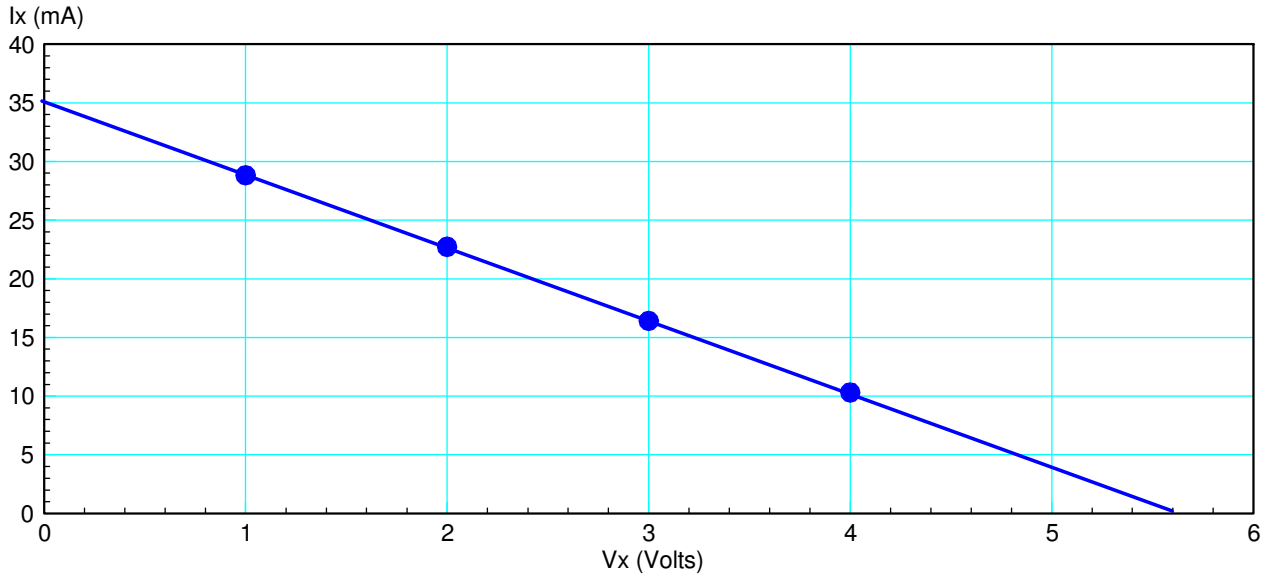
2)Determine the Thevenin equivalent for the following circuit

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	34.7 Ohms	88.9 Ohms	184.6 Ohms	400 Ohms
V	1V	2V	3V	4V
I	28.8 mA	22.5 mA	16.3 mA	10.0 mA

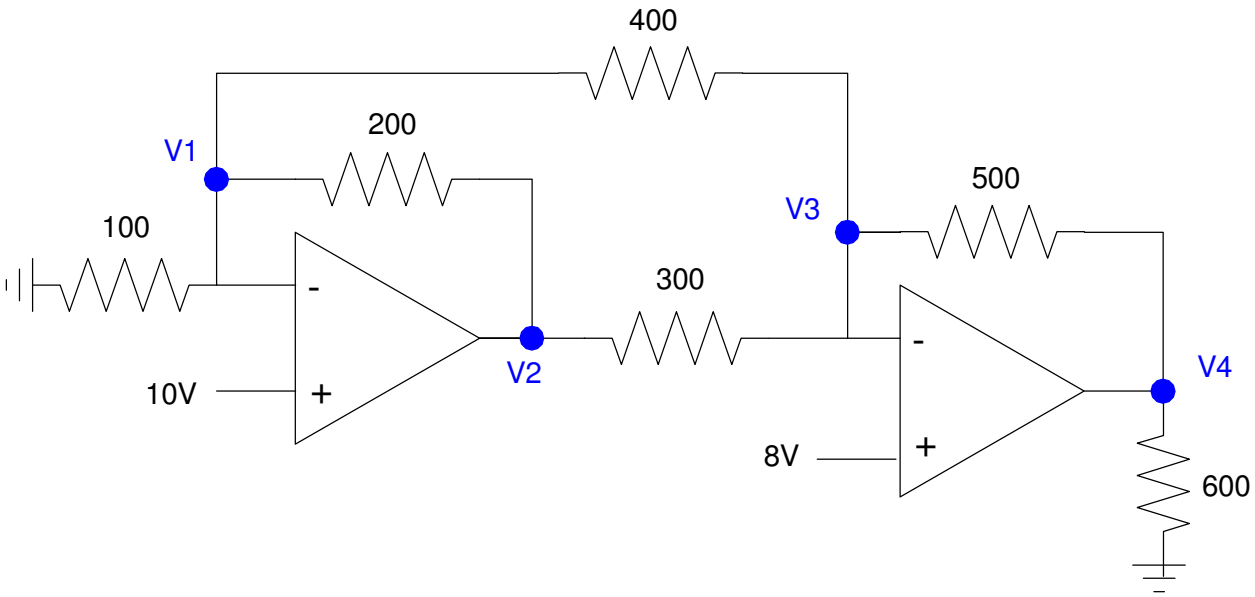


From this data, determine the Thevenin equivalend and the maximum power you can get out of this circuit.

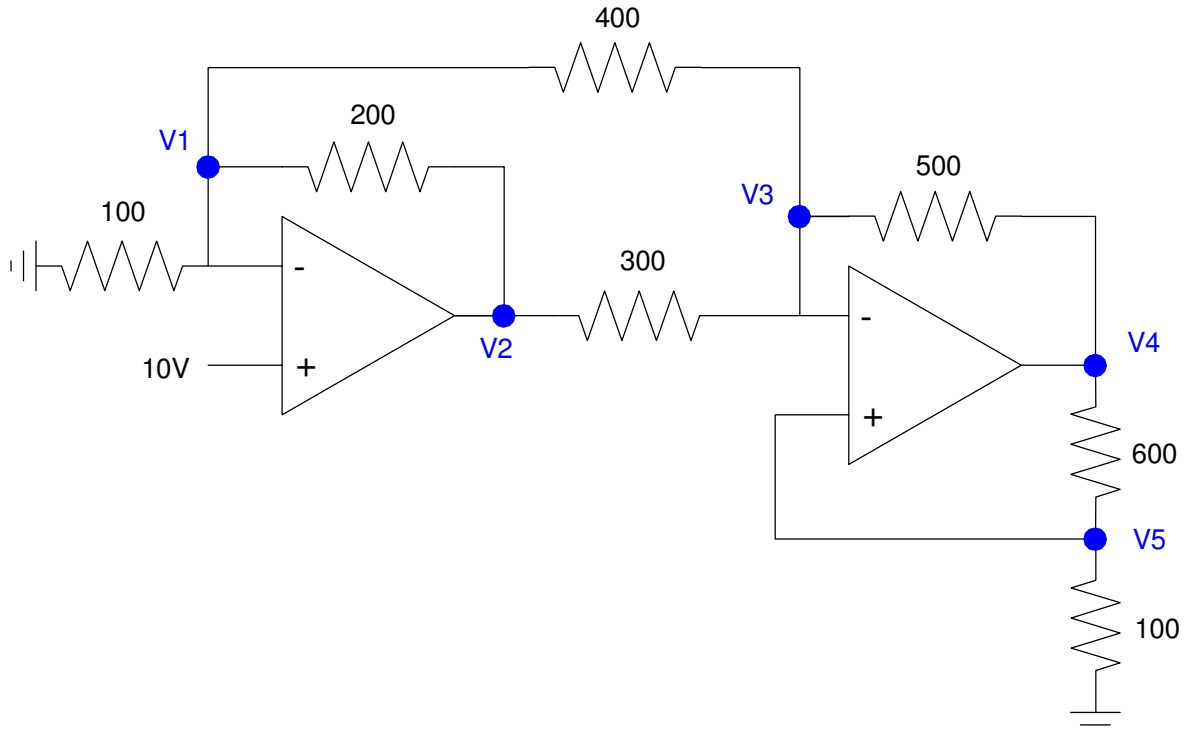
Vth	Rth	R for maximum power transfer	Max power to R

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

V1	V2	V3	V4



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



6) Design a circuit which outputs

- Y = 0V when R = 300 Ohms
- Y = +10V when R = 330 Ohms
- Y is proportional to R for 300 < R < 330 Ohms