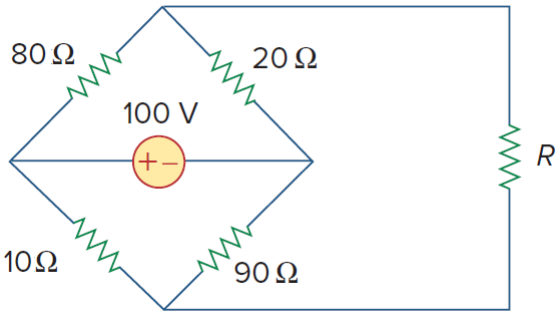
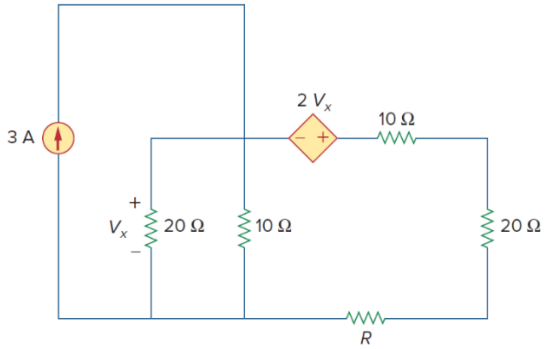
Assignment 6

1. The variable resistor R shown in the following figure is adjusted until it absorbs the maximum power from the circuit. (a) Calculate the value of R for the maximum power (b) Determine the maximum power absorbed by R.



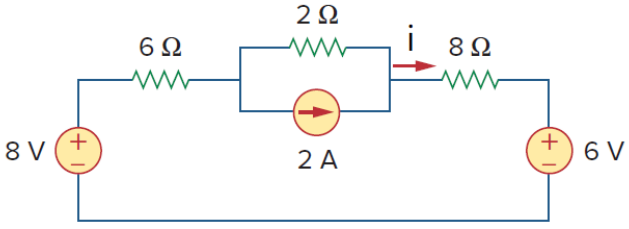
Answer: (a) R = 25Ω. (b) 49 W

2. Determine the maximum power delivered to the variable resistors R shown in the circuit shown below.



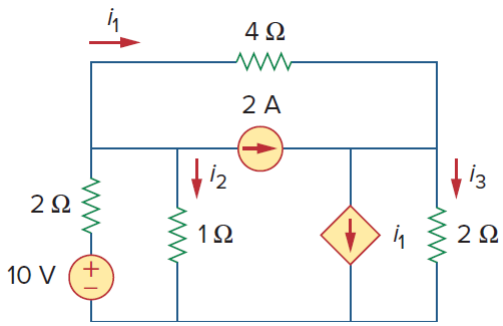
Answer: 18 W

3. Use the principle of superposition to find the current i in the following circuit and the power associated with the current source.



Answer: 375 mA.

4. Use the principle of superposition to find $i_1, i_2, and\ i_3$.



Answer: $i_1 = -428.6$ mA, $i_2 = 2.286$ A, $i_3 = 2$ A.