1. Analyze the following circuit:

2Ω

3Ω
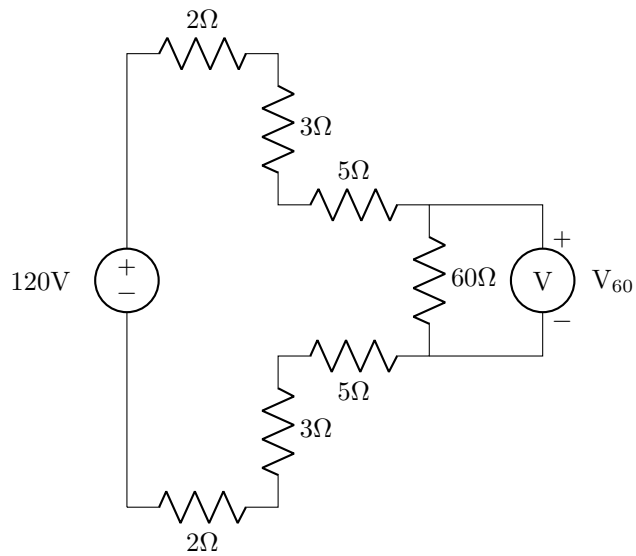
5Ω

120V

60Ω V V_{60}

5Ω

3Ω

2Ω

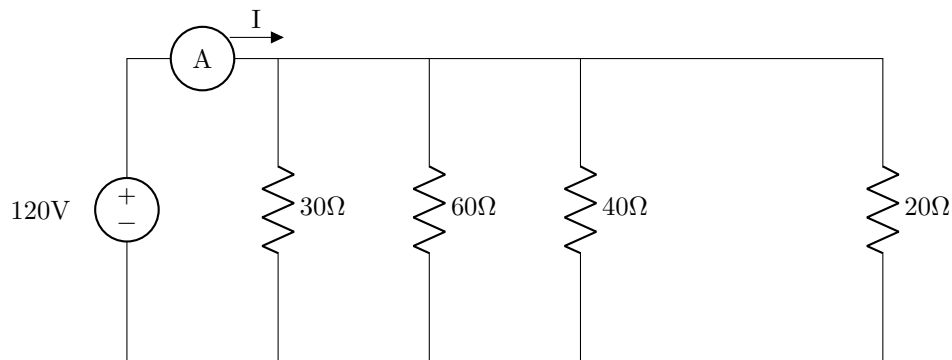(a) What power does the source supply?

$P_s =$ 180 W

(b) What does the voltmeter read?

$V_{60} =$ 90.0 V

2. Analyze the following circuit:

(a) Find the current through and power absorbed by each resistor.

I_{30} = | 4.00 A

P_{30} = | 480 W

I_{40} = | 3.00 A

P_{40} = | 360 W

I_{60} = | 2.00 A

P_{60} = | 240 W

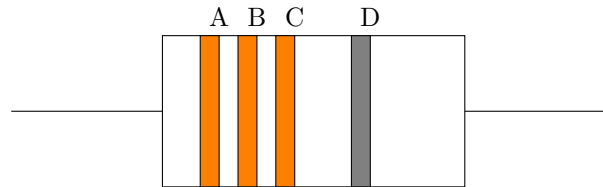I_{20} = | 6.00 A

P_{20} = | 720 W

(b) What does the ideal anmeter read?

I = | 15.0 A

3. Given the following 4-band resistor:

A B C   D

(a) What is the nominal resistance value? What would be the maximum possible resistance value (at the edge of maximum tolerance)?

$R_{nominal}$ = 33.0 KΩ R_{max} = 36.3 KΩ

(b) What would be the bands for a 150Ω resistor with 20% tolerance?

band 1 = Brown   band 2 = green

band 3 = Brown   band 4 = none

4. Given that the power absorbed by a resistor is $P = \dfrac{V^2}{R} = I^2 R$:

(a) How much voltage can you put across a 220Ω , 1W resistor?

V = 14.8V

(b) How much current can you put through a 100Ω , 2W resistor?

I = 141 mA