1. The voltage measured by the voltmeter is

\[ v_m = 20 \text{ V} \]

The value of the resistance \( R \) is \( 60 \) \( \Omega \).

The current source is supplies \( 30 \) W of power.

2. Given that

\[ i_a = 2 \text{ A}, \]

Determine the values of \( R_1 \) and \( v_o \):

\[ R_1 = 15 \Omega, \]

and

\[ i_o = -0.5 \text{ A} \]

3. The input to this circuit is the voltage of the voltage source, \( v_a \). The output of this circuit is the voltage measured by the voltmeter, \( v_b \). This circuit produces an output that is proportional to the input, that is

\[ v_b = k v_a \]

where \( k \) is the constant of proportionality.

a.) When \( R = 240 \Omega \) and \( v_a = 18 \text{ V} \), the output is \( v_b = 12 \text{ V} \).

b.) When \( R = 240 \Omega \) and \( v_a = 18 \text{ V} \), the power supplied by the voltage source is \( 0.9 \text{ W} \).

c.) When \( R = 15 \Omega \) and \( v_a = 18 \text{ V} \), the output is \( v_b = 2 \text{ V} \).

d.) When \( R = 30 \Omega \), the output is \( v_b = 0.2 v_a \). (That is, the constant of proportionality is \( k = 0.2 \).)
4. Given that 
\[ i_1 = 0.625 \text{ A}, \quad v_2 = -25 \text{ V}, \quad i_3 = -1.25 \text{ A} \quad \text{and} \quad v_4 = -18.75 \text{ V} \]

Determine the values of \( R_1, R_2, R_3 \) and \( R_4 \):

\[ R_1 = \underline{40} \quad \Omega, \quad R_2 = \underline{20} \quad \Omega, \quad R_3 = \underline{5} \quad \Omega \quad \text{and} \quad R_4 = \underline{15} \quad \Omega. \]

5. The 12 V source supplies 720 mW and the 18 V source supplies 4.32 W. Determine the values of the resistances \( R_1 \) and \( R_2 \):

\[ R_1 = \underline{40} \quad \Omega \quad \text{and} \quad R_2 = \underline{25} \]