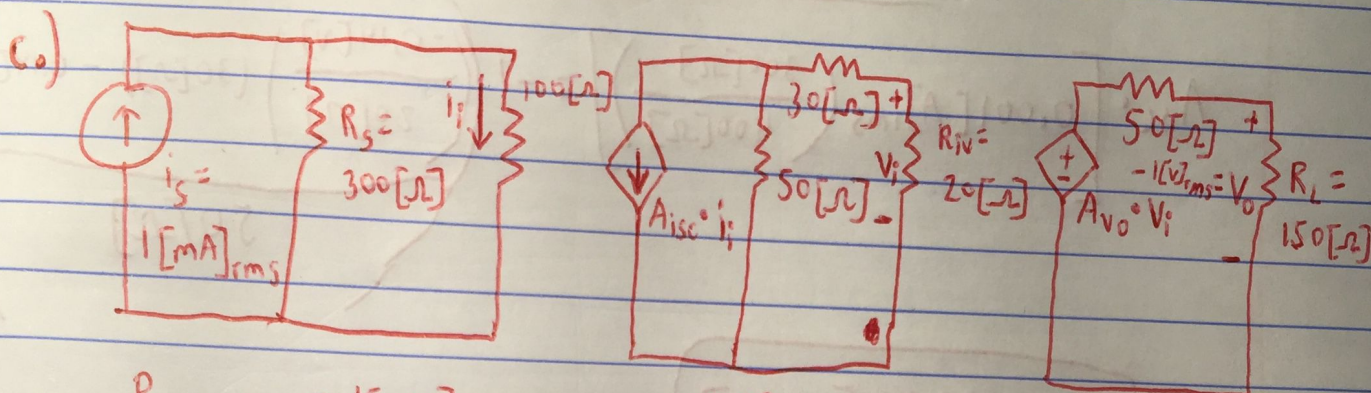


Solution 1



$$P_{ABD \text{ BY } R_{iv}} = 1 [\text{mW}] = 0.001 [\text{W}] = \frac{(V_i)^2}{20 [\Omega]} \rightarrow V_i = \pm 0.14 [\text{V}]$$

Solution 1 (using $V_i = 0.14 [\text{V}]$)

$$A_{isc} \left[0.001 [\text{A}]_{\text{rms}} \left(\frac{300 [\Omega]}{400 [\Omega]} \right) \right] = -1 \left(\frac{0.14 [\text{V}]}{20 [\Omega]} (30 [\Omega]) + 0.14 [\text{V}] \right) \cdot 50 [\Omega]$$

~~0.14 [V]~~

$$- \frac{0.14 [\text{V}]}{20 [\Omega]}$$

$$\rightarrow A_{isc} = -18.86 [\text{A/A}]$$

$$(A_{vo})(0.14 [\text{V}]) = \left(\frac{-1 [\text{V}]_{\text{rms}}}{150 [\Omega]} \right) (50 [\Omega]) - 1 [\text{V}]_{\text{rms}}$$

$$\rightarrow A_{vo} = -9.42 [\text{V/V}]$$