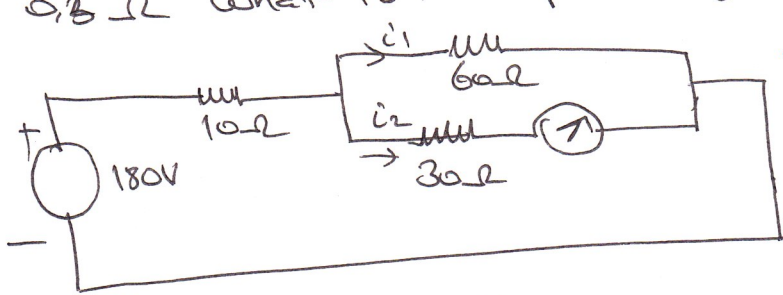


Ex The ammeter in the circuit has a resistance of 0.5Ω what is the percentage of error in the reading?



ideal

$$i_1 = \frac{180 \text{ V}}{30 \Omega} = 6 \text{ A}$$

$$i_2 = \frac{60}{80} \cdot 6 \text{ A} = 4 \text{ A}$$

measured $i = \frac{180 \text{ V}}{10 + (60 \parallel 30.5)} \Rightarrow i = 5.96 \text{ A}$

$$i_{\text{measured}} = 3.95 \text{ A} //$$

$$\% \text{ error} = \left[\frac{3.95}{4} - 1 \right] \cdot 100 = -1.28 \% //$$