

13. Let the emf be V . Then $V = iR = i'(R + R')$, where $i = 5.0\text{ A}$, $i' = 4.0\text{ A}$ and $R' = 2.0\ \Omega$. We solve for R :

$$R = \frac{i'R'}{i - i'} = \frac{(4)(2)}{5 - 4} = 8.0\ \Omega .$$