38. (a) $\mathcal{E} = V + ir = 12\,\text{V} + (10\,\text{A})(0.050\,\Omega) = 12.5\,\text{V}$.

(b) Now $\mathcal{E} = V' + (i_{\text{motor}} + 8.0\,\text{A})r$, where $V' = i'_A R_{\text{light}} = (8.0\,\text{A})(12\,\text{V}/10\,\text{A}) = 9.6\,\text{V}$. Therefore,

$$i_{\text{motor}} = \frac{\mathcal{E} - V'}{r} - 8.0\,\text{A} = \frac{12.5\,\text{V} - 9.6\,\text{V}}{0.050\,\Omega} - 8.0\,\text{A} = 50\ \text{A}\ .$$