

10. The current in the circuit is $i = (150\text{ V} - 50\text{ V}) / (3.0\ \Omega + 2.0\ \Omega) = 20\text{ A}$. So from $V_Q + 150\text{ V} - (2.0\ \Omega)i = V_P$, we get $V_Q = 100\text{ V} + (2.0\ \Omega)(20\text{ A}) - 150\text{ V} = -10\text{ V}$.