$\qquad$
a. For the circuit shown at right, when the switch is open ( $R_{3}$ and $R_{4}$ disconnected), $v_{R 2}=15 \mathrm{~V}$. When the switch is closed $\left(R_{3}\right.$ and $R_{4}$ are connected), $v_{R 2}=12 \mathrm{~V}$.
Determine the values for $R_{2}$ and $R_{4}$.


Note: Using voltage divider techniques is probably an effective way to work this problem.
$R_{2}=$ $\qquad$ ; $R_{4}=$ $\qquad$
b. For the circuit shown at right, when the switch is closed ( $R_{3}$ shorted), $i_{R 2}=20 \mathrm{~mA}$. When the switch is open ( $R_{3}$ not shorted), $i_{R 2}=10 \mathrm{~mA}$. Determine the values for $R_{2}$ and $R_{3}$. Note: Using current divider techniques is probably an effective way to work this problem.

$$
R_{2}=
$$

$\qquad$


$$
R_{3}=
$$

