$\qquad$

Use the node-voltage method in the following calculations.

a. Calculate the voltage across $R_{5}$, if all five resistances are equal to $100 \Omega$.

$$
v_{R S}=
$$

$\qquad$
b. Calculate the voltage across $R_{5}$, if $R_{1}=R_{4}=50 \Omega$ and $R_{2}=R_{3}=150 \Omega$ and $R_{5}=100 \Omega$.

$$
v_{R 5}=
$$

