$\qquad$
a. For the circuit at right, use SPICE to plot the sinusoidal voltage across the resistor $R_{3}$ together with the source voltage. Include at least four periods of the sinusoid in the plot.

For the source $V_{m}=5 \mathrm{~V}$ and $f=1591 \mathrm{~Hz}$ ( $\omega=10_{4} \mathrm{rad} / \mathrm{s}$.)

From the plots, determine the complex value of $v_{R 3}$ and and its phase shift relative to the source.


Note that there will be a transient at the start of the simulation. Determine the amplitude and phase shift from from the later periods of the plot, after the transient has disappeared.

$$
\tilde{v}_{R 3}=
$$

$\qquad$
b. Repeat for the related circuit shown at right. The source amplitude and frequency are the same as in part a.
(Foreshadowing: These are known as "bridged$T$ " $R C$ circuits. They will appear again in EE 230.)

$\tilde{v}_{R 3}=$ $\qquad$

