1.5.1 Express the signal $v(t) = 100 \cos\left(120\pi t - 45°\right)$ in phasor notation.

$$
\begin{aligned}
V(\chi) &= 100 e^{j(-45°)} \\
&= 100 e^{-j\frac{\pi}{4}} \\
&= 50\sqrt{2}(1 - j)
\end{aligned}
$$