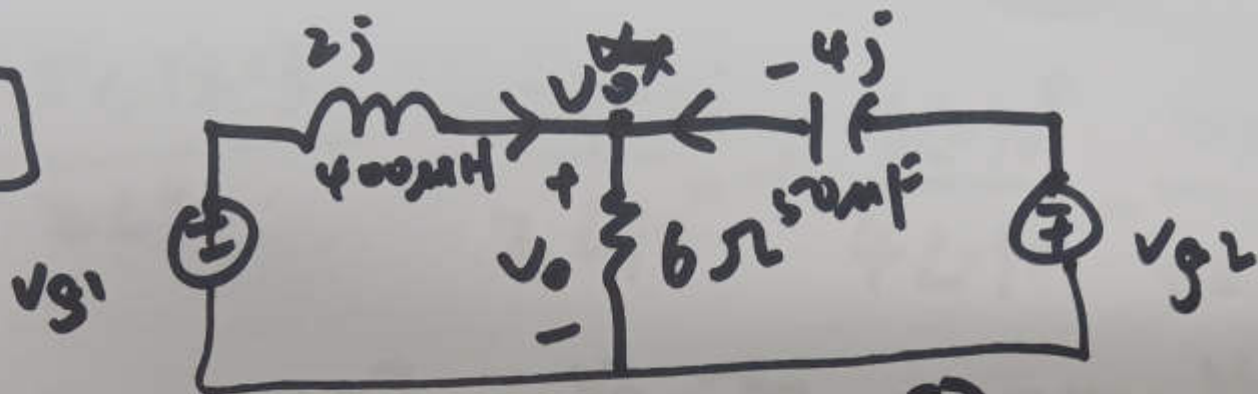
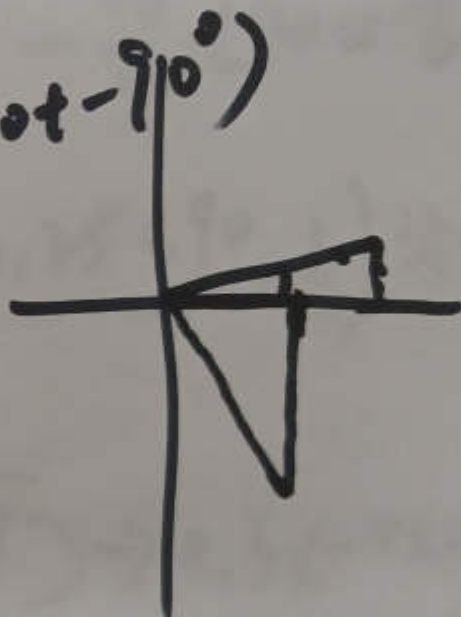


9.56



$$v_{g1} = 15 \cos(5000t + 53.13^\circ)$$

$$v_{g2} = 3 \sin(5000t) = 3 \cos(5000t - 90^\circ)$$



$$\frac{v_{g1} - v_o}{2j} + \frac{-v_{g2} - v_o}{-4j} = \frac{v_o}{6}$$

$$\frac{15 \angle 53.13^\circ - v_o}{2 \angle 90^\circ} + \frac{-3 \angle -90^\circ - v_o}{4 \angle -90^\circ} = \frac{v_o}{6}$$



①

$$\frac{15 \angle 53.13}{2 \angle 90} - \frac{V_0 \angle 0j}{2 \angle 90} + \frac{-3 \angle -90}{4 \angle -90} - \frac{V_0 \angle 0j}{4 \angle -90} = \frac{V_0}{6}$$

$$\underline{7.5 \angle -36.87} - \frac{V_0}{2} \angle \underline{-90} \angle \underline{-0.75} - \frac{V_0}{4} \angle 90 = \frac{V_0}{6}$$

$$6.91 \angle -40.6 = \frac{V_0 (0.5 \angle -90 + 0.25 \angle 90 + \frac{1}{6})}{6.91 \angle -40.6}$$

$$V_0 = \frac{6.91 \angle -40.6}{\underline{0.25 \angle -90 + 0.167}} \rightarrow 0.3 \angle -56.26$$

$$= \frac{27.64}{23.03} \angle 15.66^\circ$$