

# task\_yh4srwxu1bo1rdy4\_with\_calculation

## Student Group

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$$C) \quad \omega = 2\pi \cdot 44 \cdot 10^6 \text{ MHz} \cdot 1.6 \cdot 10^{-9} \text{ H} - \frac{1}{2\pi \cdot 10^6 \text{ MHz} \cdot 10 \cdot 10^{-9} \text{ F}} \quad \omega = +0.08062... \omega$$

To get the magnitude of the impedance  $|Z_{RLC}|$  one can use the Pythagorean Theorem:  $|Z_{RLC}| = \sqrt{R^2 + X_{LC}^2} = \sqrt{(0.020 \omega)^2 + (0.08062... \omega)^2} = 0.0830... \omega$

For the phase  $\varphi$  the  $\arctan$  can be applied:  $\varphi = \arctan\left(\frac{X_{LC}}{R}\right) = \arctan\left(\frac{0.08062... \omega}{0.020 \omega}\right) = 1.3276... \hat{=} +76^\circ$

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