**INSIGHTS FOR FILTER DESIGN**

Both filters are voltage dividers of the general form:

\[ H_1(j\omega) = \frac{R_1}{R_1 + j\omega C} \]

\[ H_2(j\omega) = \frac{1}{j\omega L} \]

In RC circuit:

\[ H(j\omega) = \frac{\frac{1}{j\omega C}}{1 + \frac{1}{j\omega C}} \]

In RL circuit:

\[ H(j\omega) = \frac{\frac{1}{j\omega L}}{1 + \frac{1}{j\omega L}} \]

**Hint for LAB:** What can you choose for \( Z_1 + Z_2 \)?

\[ H(j\omega) = \frac{\frac{V_{out}}{V_{in}}}{\frac{Z_2}{Z_1}} = \frac{Z_2}{Z_1} \]