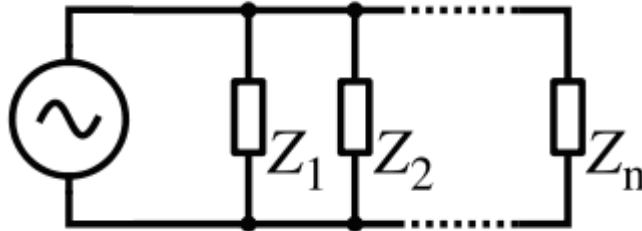


## PARALLEL IMPEDANCE IN AC CIRCUITS

This file continues the discussion in <http://math.ucr.edu/~res/math153/impedance.pdf>, and specifically the comments about impedance in parallel at the end. If we are given an AC circuit with parallel impedances as in the circuit diagram



then the inverse total impedance is the sum of the inverses of the component impedances:

$$\frac{1}{Z_{\text{eq}}} = \frac{1}{Z_1} + \frac{1}{Z_2} + \cdots + \frac{1}{Z_n}$$

Since impedances are complex numbers, the use of this formula to compute the total impedance requires some understanding of the arithmetic of complex numbers, and especially the rule for evaluating reciprocals of complex numbers. Computational examples are given in the file <http://math.ucr.edu/~res/math153/history09b.pdf> and the exercises for Unit 9.