Symbols

R = Resistance

$G = 1/R$ = Conductance

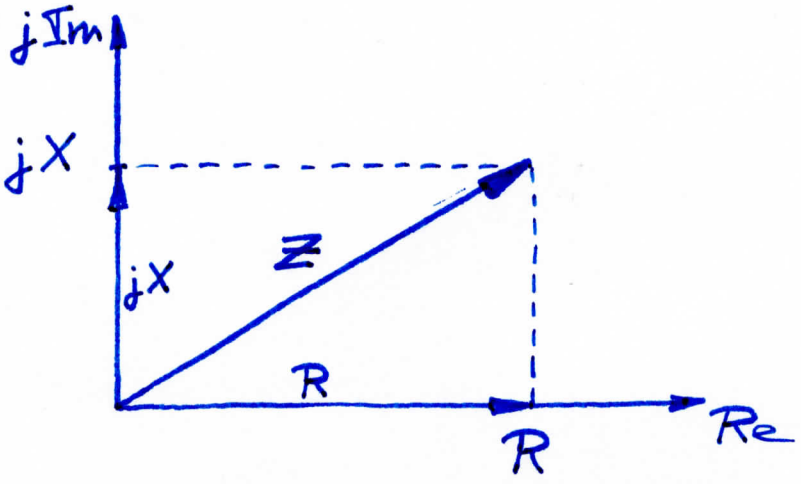
Z = Impedance

$y = 1/Z$ = Admittance

$Z = R + jX$

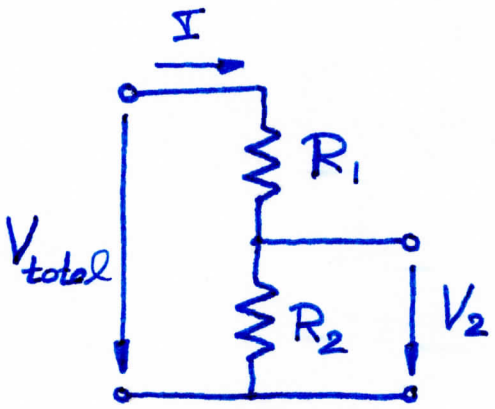
jX → Reactance

R → Resistance



Complex plane

Voltage divider



$$I = \frac{V_{total}}{R_1 + R_2}$$

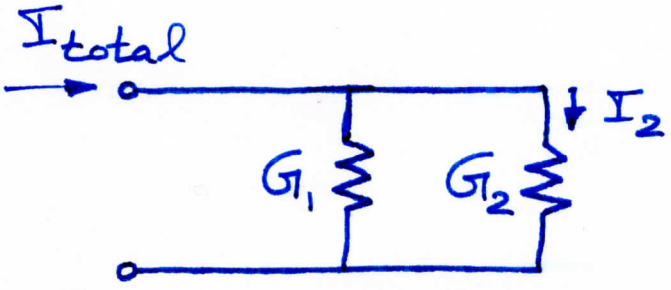
$$\| $$

$$I = \frac{V_2}{R_2}$$

$$\Rightarrow \frac{V_{total}}{R_1 + R_2} = \frac{V_2}{R_2} \Rightarrow \boxed{V_2 = V_{total}\,\frac{R_2}{R_1 + R_2}}$$

↳ V-divider eqn.

Current divider



$$V = \frac{I}{G_1 + G_2}$$

$$\| $$

$$V = \frac{I_2}{G_2}$$

$$\Rightarrow \frac{I}{G_1 + G_2} = \frac{I_2}{G_2} \Rightarrow \boxed{I_2 = I \frac{G_2}{G_1 + G_2}}$$

↳ I-divider eqn.

Using R instead of G: $I_2 = I \frac{1/R_2}{1/R_1 + 1/R_2}$