Example 2.2, Final Steps (See Textbook, Page 47)

$$G = \frac{v_o}{v_i} = \frac{Z_2}{(R_1 + Z_2)} \frac{Z}{(R_1 + Z)} = \frac{Z_2}{(R_1 + Z_2)} \frac{1}{(R_1 / Z + 1)}$$

Substitute: $\frac{1}{Z} = \frac{1}{Z_2} + \frac{1}{R_1 + Z_2}$

$$G = \left[\frac{Z_2}{(R_1 + Z_2)} \right]^2 \frac{(R_1 + Z_2)}{Z_2} \frac{1}{\left[R_1 (\frac{1}{Z_2} + \frac{1}{R_1 + Z_2}) + 1 \right]} = \left[\frac{Z_2}{(R_1 + Z_2)} \right]^2 \frac{(R_1 + Z_2)^2}{\left[R_1 (R_1 + Z_2 + Z_2) + Z_2 (R_1 + Z_2) \right]}$$

$$= \left[\frac{Z_2}{(R_1 + Z_2)} \right]^2 \frac{(R_1 + Z_2)^2}{\left[(R_1 + Z_2)^2 + R_1 Z_2 \right]}$$

$$\rightarrow \quad G = \left[\frac{Z_2}{R_1 + Z_2} \right]^2 \frac{1}{[1 + R_1 Z_2 / (R_1 + Z_2)^2]}$$