

$$\frac{U_2}{U_g} = \frac{\frac{R_L \cdot R_2}{R_L + R_2}}{R_1 + \frac{R_L \cdot R_2}{R_L + R_2}} = \frac{\frac{R_L \cdot R_2}{R_L + R_2}}{\frac{R_1(R_L + R_2) + R_L \cdot R_2}{R_L + R_2}}$$

$$\frac{U_2}{U_g} = \frac{R_L \cdot R_2}{R_1 R_L + R_1 R_2 + R_L \cdot R_2}$$

$$U_2 \cdot R_L (R_1 + R_2) + U_2 R_1 R_2 = U_g \cdot R_L R_2$$

$$R_L = \frac{U_g \cdot R_L R_2 - U_2 R_1 R_2}{U_2 (R_1 + R_2)}$$

$$U_2 R_1 R_2 = R_L (U_g \cdot R_2 - U_2 (R_1 + R_2))$$

$$R_L = \frac{U_2 R_1 \cdot R_2}{U_g R_2 - U_2 R_1 - U_2 R_2}$$