

$$\frac{e_o(s)}{e_i(s)} = \frac{\frac{R}{1+SRC}}{SL1 + \frac{R}{1+SRC}}$$

← original transfer function expression

$$\therefore e_o(s) = \frac{\frac{R(e_i(s))}{1+SRC}}{SL1 + \frac{R}{1+SRC}}$$

multiplying through by $\frac{1}{SL1 + \frac{R}{1+SRC}}$

$$= e_o(s) = \frac{R(e_i(s))}{SL1 + \frac{R}{1+SRC} (1+SRC)}$$