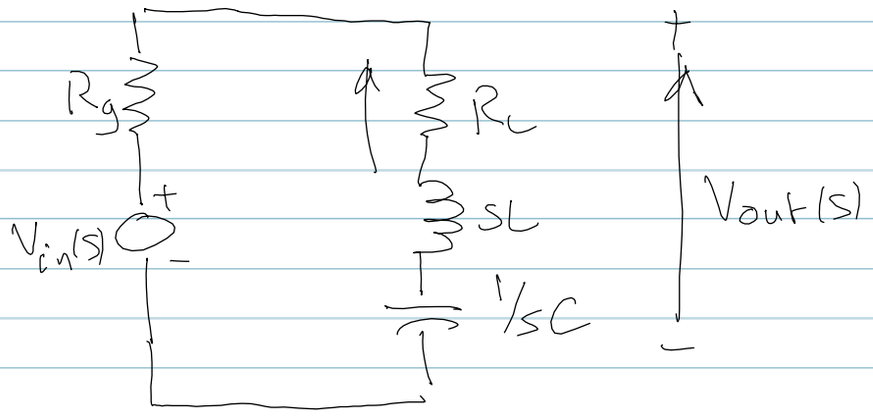
Example 6



$$V_{out} = \frac{R_L + sL + 1/sC}{R_g + R_L + sL + 1/sC} V_{in}$$

$$G(s) = \frac{R_L + sL + 1/sC}{R_g + R_L + sL + 1/sC} = \frac{sCR_L + s^2CL + 1}{sC(R_g + R_L) + s^2LC + 1}$$

$$= \frac{s^2CL + sCR_L + 1}{s^2LC + sC(R_g + R_L) + 1}$$

$$= \frac{s^2 + R_L/L\,s + 1/LC}{s^2 + \frac{1}{L}(R_g + R_L)s + 1/LC}$$