

$$\frac{1}{L(\sigma + j\omega)} + \frac{1}{L(\sigma - j\omega)} = Y + Y^*$$

$$= \frac{1}{L} \left[\frac{2\sigma}{|\sigma + j\omega|^2} \right] > 0 \quad \text{in } \sigma > 0$$

$\therefore Y(s) = \frac{1}{2a}$ is positive real

$$2V^1 = V + I, \quad 2V^2 = V - I$$

$$= \left(1 + \frac{1}{2a}\right)V = \left(1 - \frac{1}{2a}\right)V$$

$$\frac{2V^2}{2V^1} = S(s) = \frac{1 - \frac{1}{2a}}{1 + \frac{1}{2a}} = \frac{2a - 1}{2a + 1}$$

$$S(-s) = \frac{-2a - 1}{-2a + 1} = \frac{1 + s}{2a - 1} = \frac{1}{S(s)}$$