

$$F(s) = \frac{2s+1}{s^2+5s+2} = \frac{P(s)}{Q(s)}$$

$$P(s) = 2s + 1 \quad p_1 \times -0.5$$

$$Q(s) = s^2 + 5s + 2, \quad \text{poles } s_1 = -0.438, \quad s_2 = -4.561$$

$$Q'(s) = 2s + 5$$

$$F(s) = \frac{P(s_1)}{Q'(s_1)} \frac{1}{s-s_1} + \frac{P(s_2)}{Q'(s_2)} \frac{1}{s-s_2}$$

$$\ddot{y} \quad F(s) = \frac{0.124}{4.124} \frac{1}{s+0.438} + \frac{-8.122}{-4.122} \frac{1}{s+4.561}$$

$$\ddot{y} \quad F(s) = 0.030 \frac{1}{s+0.438} + 1.970 \frac{1}{s+4.561} \quad (*)$$

$$\dot{x} \quad f(t) = 0.03 e^{-0.438t} + 1.97 e^{-4.561t}$$

$$(*) \quad \frac{0.03}{s+0.438} + \frac{1.97}{s+4.561} = \frac{2s+0.999}{s^2+4.999s+1.998} \quad (O.K.)$$