mechanical impedance: $\dfrac{Y(s)}{F(s)} = \dfrac{1}{ms^2} = \dfrac{1}{s^2} = N(s)$
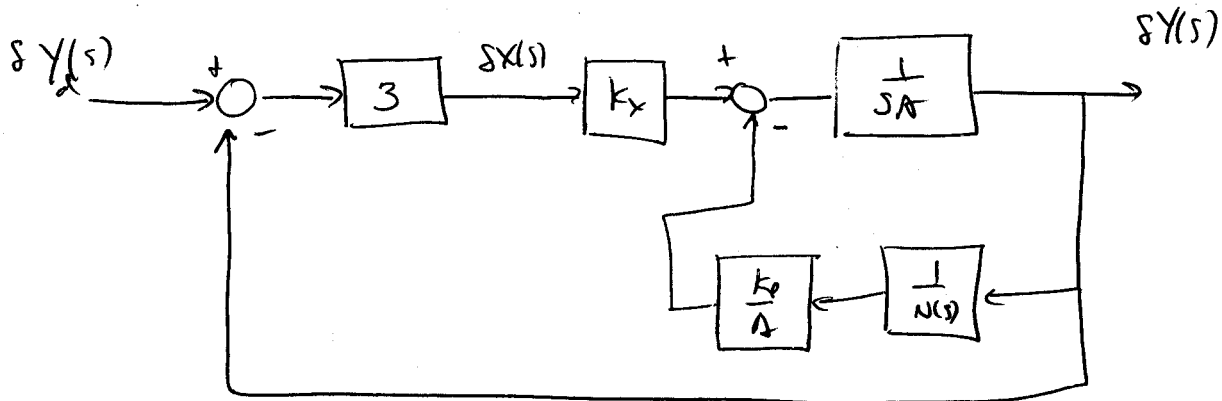
System block diagram:

plugging in numbers: