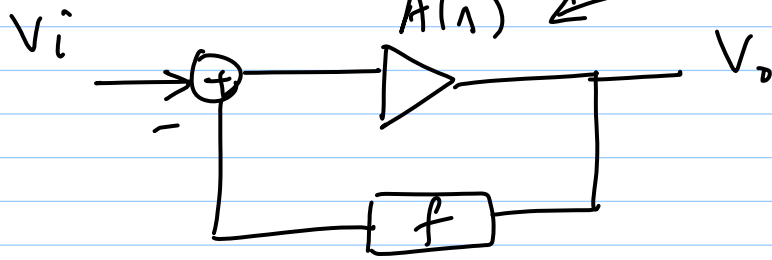


7-11-12

Lec 42



1st-order

$$A(s) = \frac{A_0}{1 + s/\omega_p}$$

Unconditionally stable

2nd order

$$A(s) = \frac{A_0}{(1 + s/\omega_p)^2}$$

→ technically stable, but high Q (ringing)

3rd-order

$$A(s) = \frac{A_0}{(1 + s/\omega_p)^3} \leftarrow \text{unstable for } A_0 f > 8$$

Dominant pole

$$A(s) = \frac{A_0}{(1 + s/\omega_d)(1 + s/\omega_p)^3} ; \omega_d \ll \omega_p$$

