P3360 / AEP 3630
Lecture 10
Negative Feedback

Good amp:
- $R_{in} \gg R_s$
- $R_{out} \ll R_L$
- $G(w) = \text{const}$

"Bare" op-amp problems:
- small active range
- large $G$ variations
- $G \propto \frac{1}{\omega}$ for $\omega_c \geq 10\text{Hz}$
- $R_{out}$ is fairly large
$I_{out} =$

- throw away ________ to make a stable circuit, indep. of ________

Advantages of negative F.B.

$(\Sigma m)_{active} =$
\[ G(\omega) = \frac{G_0}{1 + j\omega/\omega_0} \]

\[ G_{cl} = \]

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\[ R_{m,cl} = \]
$V_{out} =$
$V_{out} =$

$R_{out,cl} =$

Rules for analyzing negative F.B. circuits

1) Current rule:
2) Voltage rule: