

ECE3204 Lecture 5

Noninverting Gain (2.3)

Inverting Gain (2.2)

Bandwidth Limit (2.7)

Handouts:

Transfer function review

1st Order System Step Response /
Bandwidth Risetime Relationship

Op-Amp as a Classical Feedback
System

Bode plot Guide / s-Plane Review

“Language” of Transfer Function

Op-Amp Analysis

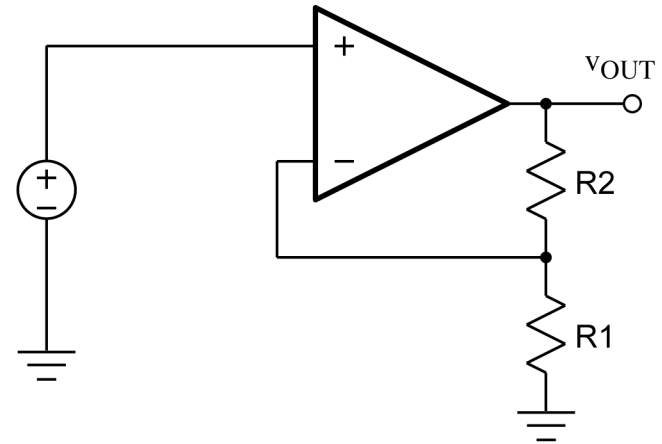
FIRST: CHECK NEGATIVE FEEDBACK

1. Change v_{IN}
2. Follow change around loop
3. Does v_{OUT} change to keep v_- , v_+ together?
If yes: negative feedback

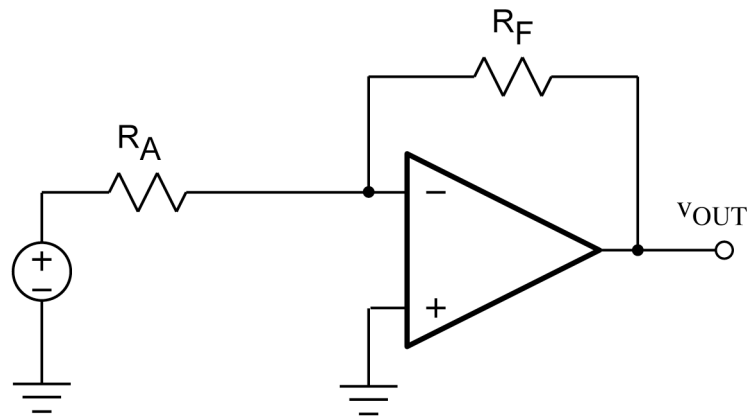
THEN $v_- \approx v_+$

(How \approx ? Depends on A large)

Simpler analysis of noninverting gain op-amp circuit



Inverting Gain Op-Amp Circuit



Noninverting gain op-amp circuit Scope Photos

