IDEAL AC OP-AMP ASSUMPTIONS AND REALITY

- 1. Infinite open-loop voltage gain; $\therefore v_+ v_- = v_{id} = 0$
- 2. Infinite open-loop bandwidth
- 3. Infinite input resistance at either input terminal; $\therefore i_+ = 0$, and $i_- = 0$
- 4. Zero output resistance
- 5. Infinite output current capability
- 6. Infinite slew rate
- 7. Infinite common mode rejection
- 8. Infinite power supply rejection
- 9. Infinite output voltage range [not limited by $-V_{EE} \le v_o \le V_{CC}$]

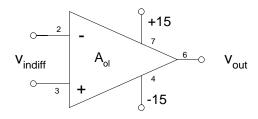
IDEAL DC OP-AMP ASSUMPTIONS AND REALITY

- 1. Zero input bias currents; $\therefore I_+ = 0$, and $I_- = 0$
- 2. Zero input offset currents; $\therefore I_+ I_- = 0$
- 3. Zero input offset voltage; $\therefore V_{+} V_{-} = 0$

THE GOLDEN RULES of OP-AMP BEHAVIOR

[from Horowitz & Hill, page 177]

- 1. The output attempts to do whatever is necessary to make the voltage difference between the inputs zero. [The output "looks" at the input terminals and swings the output terminal around so that the external feedback network brings the input differential to zero, if possible.]
- 2. The inputs draw no current.



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