

Topic

Op Amps

Governing Equations and Assumptions

Standard Op Amp Circuits

- Inverting
- Summing
- Noninverting
- Difference

Saturation Check

$$V^- \leq V_o \leq V^+$$

Process

- ① Determine whether the circuit is a standard op amp circuit or can be converted into a standard op amp circuit (Source Transformations)
- ② If it is a standard circuit, apply the correct output voltage equation
 - If not, derive the equation
 - $i_p = i_n = 0$
 - $v_p = v_n$
 - \Rightarrow Find v_p or v_n
 - \Rightarrow KVL (Left)
 - \Rightarrow KVL (Perimeter)
- ③ Check for Saturation
 - If saturates $\Rightarrow V_o = V^-$ or V^+