NOTES SHEET HELP

The following diagrams should help you fill in the more difficult boxes in the notes sheet.

For practice:

- Figure out how each circuit works.
- Write equations based on resistor, capacitor, etc. values.
- See how changing resistance, capacitance, etc. changes the output.
- Determine how the rails of the amplifiers would affect the output.
- Determine if high currents could be created that would "melt" things.
- Rework designs for V_{DD} = 3 V instead of 5 V.
- See how different diode models would affect output.
- Hook these together, either with no purpose in mind, or to design. See what happens.

SUMMING AMPLIFIER



DIFFERENCE AMPLIFIER

All resistors equal for Vo = $V_1 - V_2$



INTEGRATING AMPLIFIER

This one is easier to understand, results in $\frac{1}{2}$

$$V_0 = -\frac{1}{RC} \int_0^L V_i(t) dt + V_C(0)$$

Attach inverting amplifier to output to remove negative sign.



FULL WAVE RECITIFIER







DC RESTORER



SQUARE WAVE GENERATOR



TRIANGLE WAVE GENERATOR



2-BIT A/D CONVERTER



3-BIT D/A CONVERTER

Resistor values word for V_{DD} = 5 V.

