

Power Supply Calculations

For V_o (output voltage) of IC LM317 circuit
a $10\text{K}\Omega$ variable resistor was utilized
with a $12\text{K}\Omega$ resistor connected in parallel

$$V_o = \overset{V_{ref}}{1.25} \left(1 + \frac{R_2}{R_1} \right) + \cancel{I_{Adj} R_2}$$

I_{Adj} is at about $45\mu\text{A}$

$$\therefore V_o = 1.25 \left(1 + \frac{R}{R_4} \right)$$

so because
'it's very
small the
value is
negligible

$$R_3 = 12\text{K}\Omega$$

$$R_V = 10\text{K}\Omega$$

$$R_4 = 220\Omega$$

$$V_{ref} = 1.2\text{V}$$

$$R = \frac{R_3 \times R_V}{R_3 + R_V}$$

$$\rightarrow = 1.25 \left(1 + \frac{\left(\frac{12\text{K} \times 10\text{K}\Omega}{22\text{K}} \right)}{220} \right)$$

$$\therefore \underline{V_o = 32.24\text{V}}$$

