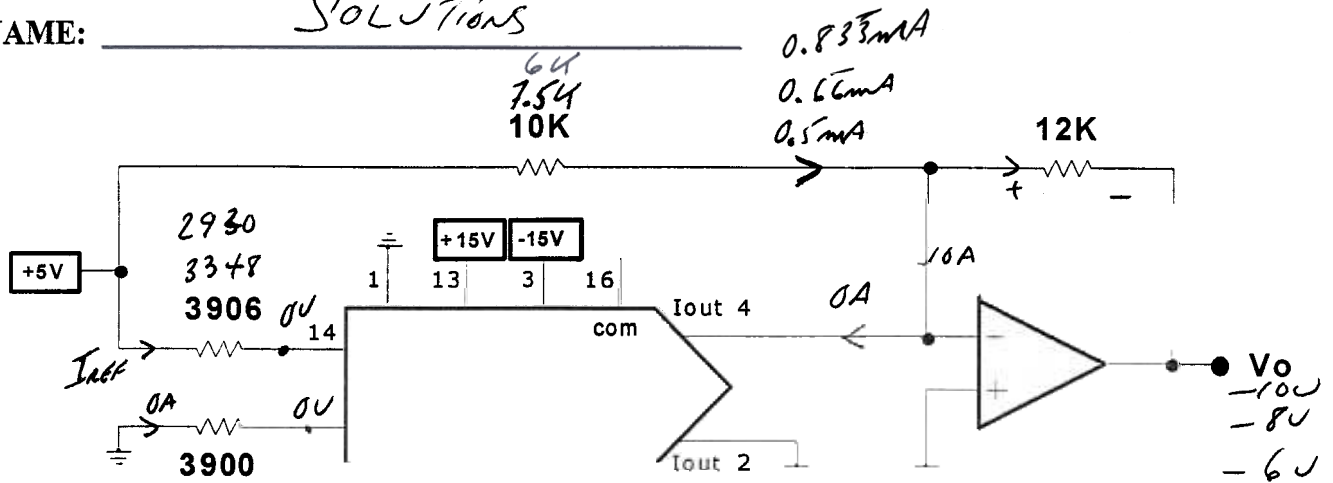


NAME: SOLUTIONS



**BIN INPUT**

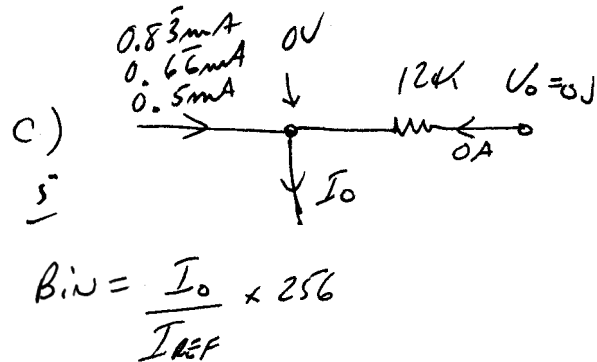
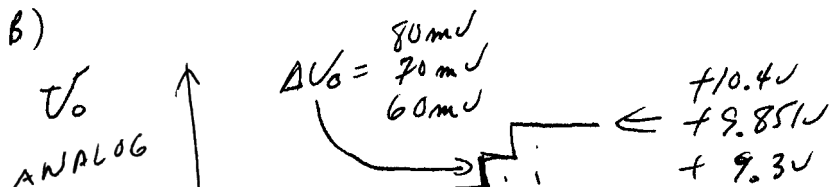
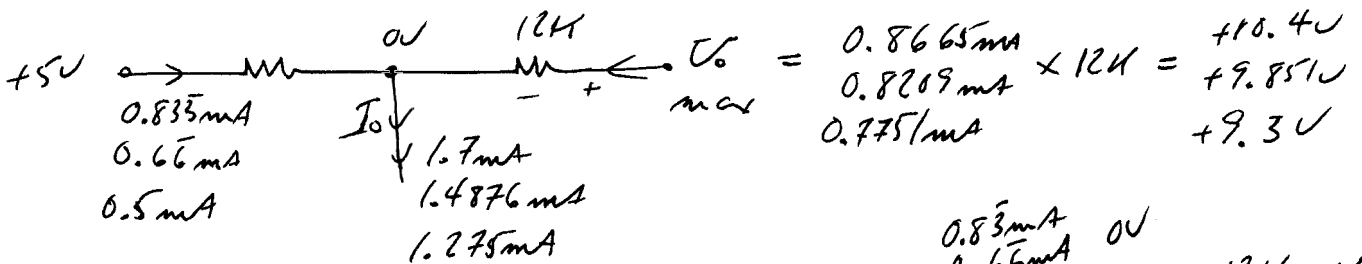
$Bin = 0 \quad I_o = 0$

$$I_o = I_{REF} \times \frac{BIN}{256}$$

$$V_o = \begin{matrix} -10V & +10.4V \\ -8V & +9.851V \\ -6V & +9.3V \end{matrix}$$

- 10 A) Determine the analog output voltage range.
- 5 B) Sketch the DAC input-output characteristic and label it with relevant mvalues - label axes too
- 5 C) What is the binary input that produces an output closest to 0V?  $Bin = 100, 114, 125$

A)  $V_{o, min} = -6V \text{ or } -8V \text{ or } -10V$   
 $I_{REF} = 1.28mA, 1.4934mA, 1.7065mA$



$$BIN = \frac{0.5mA, 0.66mA, 0.833mA}{1.28mA, 1.493mA, 1.706mA} \times 256$$
  

$$BIN = 100, 114.3, 125$$
  
 dec

