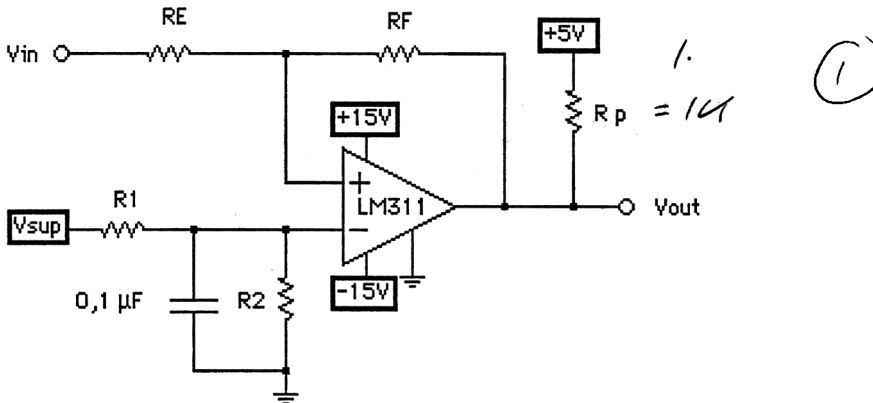


NAME: SOLUTIONS

Lab GROUP: Wed Thu

Design a non-inverting Schmitt trigger with -3V and +6V trigger points.  
 Assume  $V_o$  is around 4,6V at UTP and assume a low O/P to be +0.2V  
 Write all standard resistor values on the final circuit.

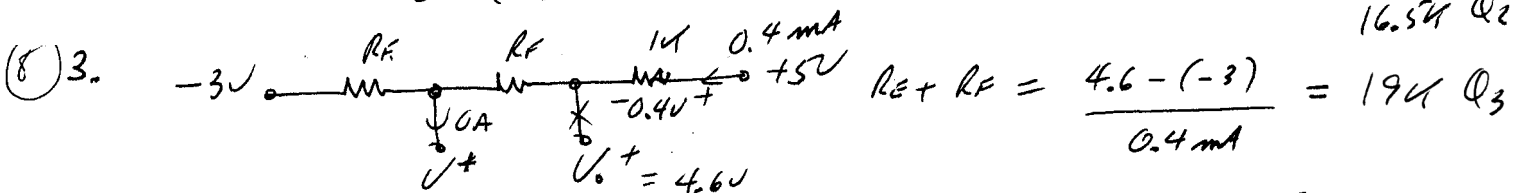


5% standard capacitors and resistors

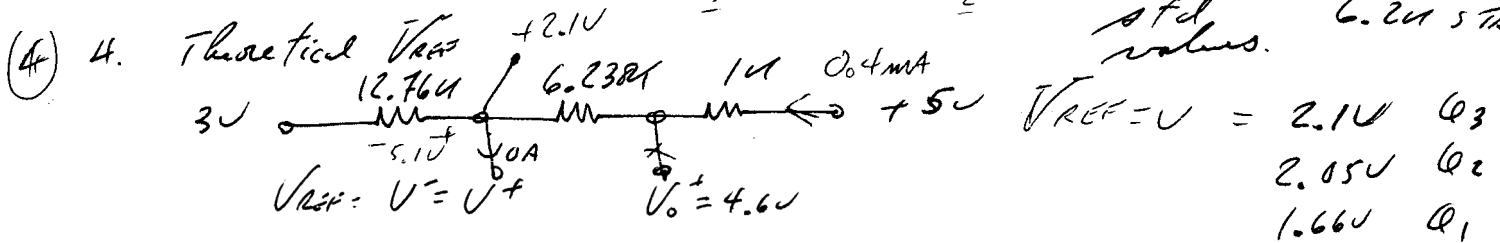
1	1.1	1.2	1.3	1.5	1.6	1.8	2	2.2	2.4	2.7	3	x 10 <sup>N</sup> N = ... -3, -2, -1, 0, 1, 2, 3 ...
3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1	

2.  $\frac{R_F}{R_E} = \frac{4.6 - 0.2}{6 - (-3)} = 0.488$  (0.6286) (1.1)

14k Q1  
16.5k Q2



$R_E + R_F = 1.488 R_E = 19k \Rightarrow R_E = 12.76k$  13k = R\_E R\_F = 6.35k  
 3  
 6.2k std values.



(U) 5.  $\frac{R_1}{R_2} = \frac{12.9}{2.1} = \frac{6.143}{0.8}$  6.317 Q2  
 $R_{PDS} = 12.76k // 6.23k = 4.19k$   $\frac{1}{R_1} + \frac{1}{R_2} = \frac{1}{6.143 R_2} + \frac{1}{R_2} = \frac{1}{4.19k}$   
 3  
 $R_2 = 4.87k$   $R_1 = 29.93k$  pick std values 2