

## F2018 MTE220 Assignment 2

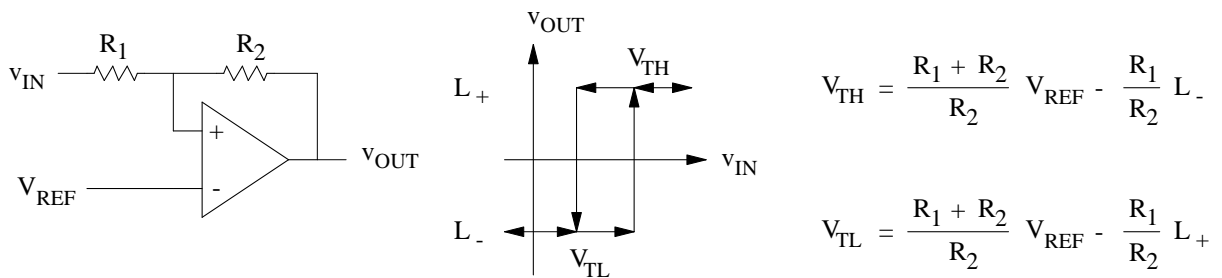
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Opamps are available with the following data sheet values:

$V_{OS}$	$I_B$	$I_{OS}$	$R_D$	$R_C$	$R_O$	$f_t$	$A_o$	$I_{sc}$	$L_+$	$L_-$
1 mV	1 $\mu$ A	1 nA	1 M $\Omega$	1 G $\Omega$	75 $\Omega$	1 MHz	200 k	10 mA	+14 V	-14 V

where  $I_{sc}$  is the maximum current the opamp's output can supply.

5% PVNS (Preferred Value Numbering Systems) list: 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68, 75, 82, 91.



- (1) Given a 50  $\Omega$  impedance input signal, supply a signal conditioning circuit which has an alarm signal output. The alarm signal should output 5.00 V if  $v_{IN} \geq +12.0$  V and remain in the alarm state until  $v_{IN} \leq +10.0$  V when it drops to 0.00 V. You have available two general purpose opamps, eight 5% PVNS resistors, and a  $\pm 15.0$  V power supply.