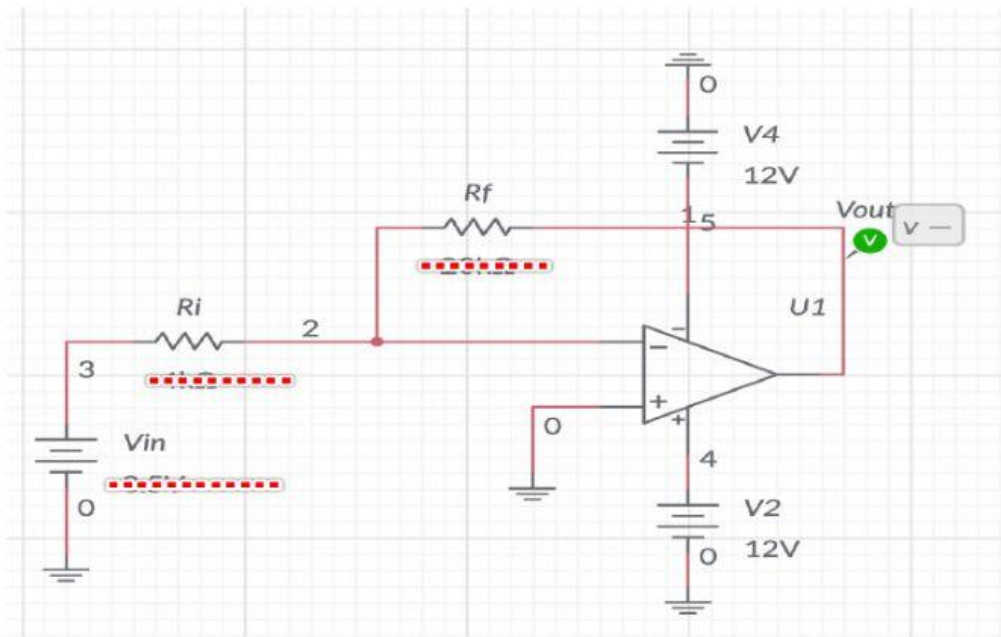


Grade	12 AEE	Subject	Term 3- Electronics Principles and App. AEE70
Name		ID	
Section	01	Date	W11-WS1-Op Amp

- 1) Complete the following tables.  
 a. Inverting amplifier.

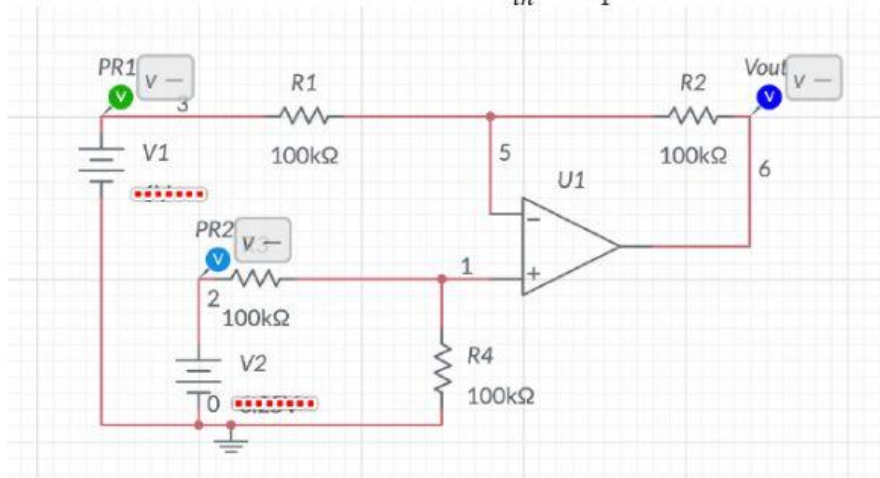
$$A = \frac{V_{out}}{V_{in}} = -\frac{R_f}{R_i} \cdot V_{in}$$



$V_i$	$R_i$ (K $\Omega$ )	$R_f$ (K $\Omega$ )	Amplifier Gain (A)	$V_{out}$ (V)
0.5 V	10	10		
1 V	2	10		
2 V	1	15		
10 V	10	5		
10V	10		-1	
2.5V		100		5
-2V		100		2
10V	5	10	-2	

b) Differential amplifier

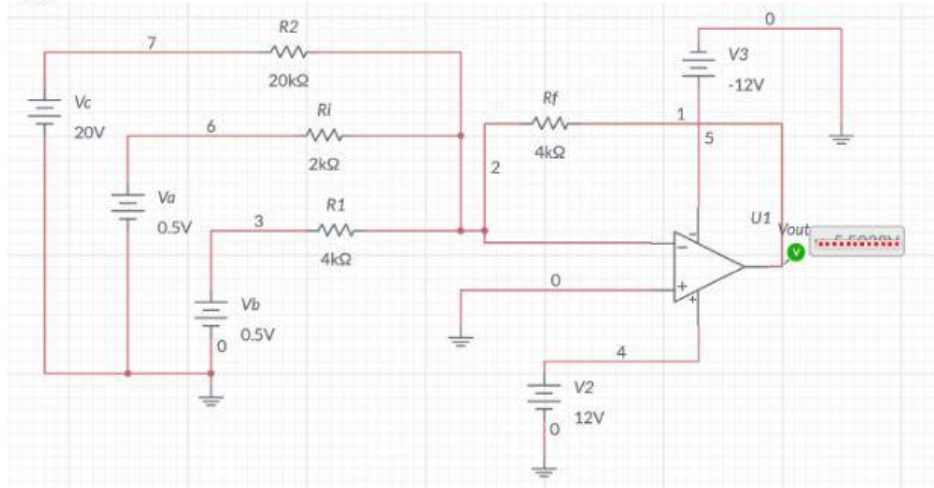
$$\text{Gain} = A = \frac{V_{out}}{V_{in}} = \frac{R_2}{R_1} \cdot (V_2 - V_1)$$



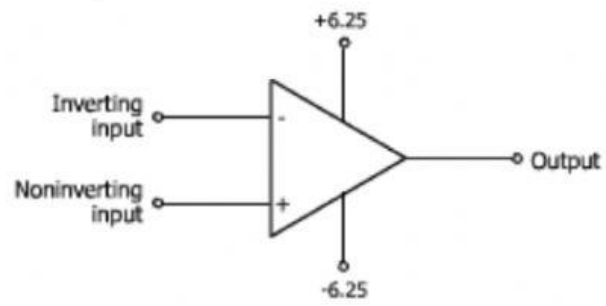
V <sub>1</sub> (v)	V <sub>2</sub> (v)	A= Amplifier Gain / type	V <sub>out</sub> (V)
XX	XX	Gain=	XXX
0	2	Positive gain	
1	2	Differential gain	
2	0	Negative gain	
3			3
	3		1
9	0		
	8		8
1	1		

c) In the circuit below, find the value of V<sub>out</sub>

V<sub>out</sub> =



Q2) Find the output of the comparator shown below:



$V_{\text{inverting input (v)}}$	$V_{\text{None inverting (v)}}$	$V_{\text{out (v)}}$
0	1	
1	0	
1	1	
-1	-1	
2	3	
3	2	
-2	2	
2	-2	
-4	-6	
-6	-4	