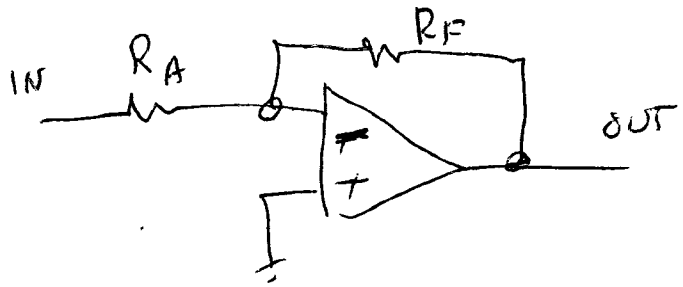
EE320 - quiz - week 2

Name Key

-0 1
-1 9
-2 2
-3 6
-5 2
-7 1
-8 1

1. Draw the circuit diagram of the basic inverting amplifier configuration.



Give an expression for the voltage gain of the circuit in terms of the resistors, assuming an ideal op-amp.

$$-\frac{R_F}{R_A}$$

-0 13
-1 4
-2 4
-3 1

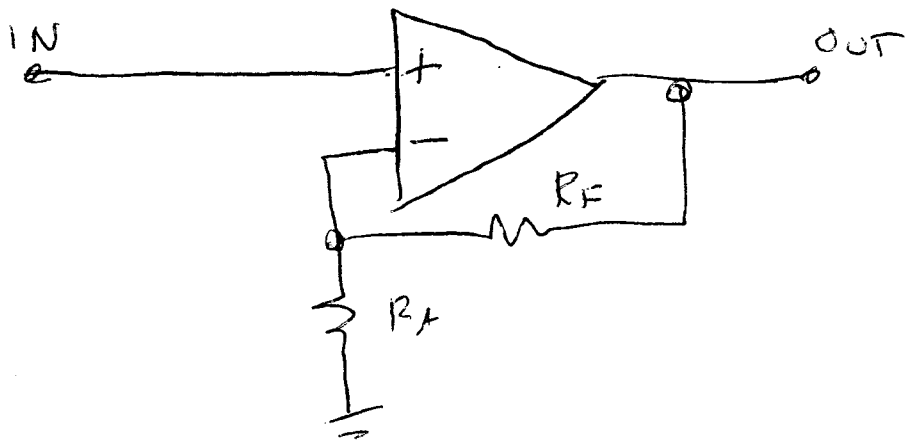
Give an expression for the input impedance of the circuit.

R_A

Give the resistor values for a voltage gain of -20 and input impedance of 20k.

$R_A = 20K$ $R_F = 400K$

2. Draw the circuit diagram of the basic non-inverting amplifier configuration.



-0 2
-1 10
-2 3
-3 5
-5 2

Give an expression for the voltage gain of the circuit in terms of the resistors, assuming an ideal op-amp.

$$\frac{V_{OUT}}{V_{IN}} = 1 + \frac{R_F}{R_A}$$

Give an expression for the input impedance of the circuit.

∞

Give the resistor values for a voltage gain of 20 and input impedance of 20k. You may use resistor values only 1k and higher.

$R_A = 1K$
$R_F = 19K$

+1 for doing this.

Add a resistor: $= 20K$