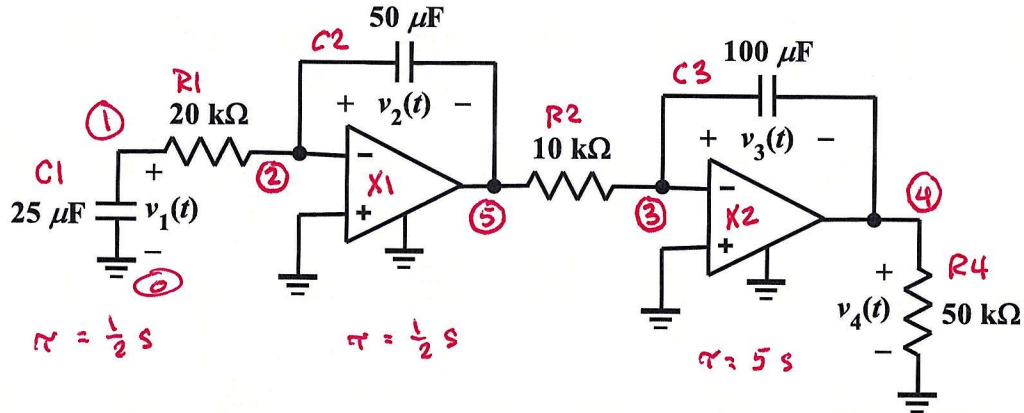
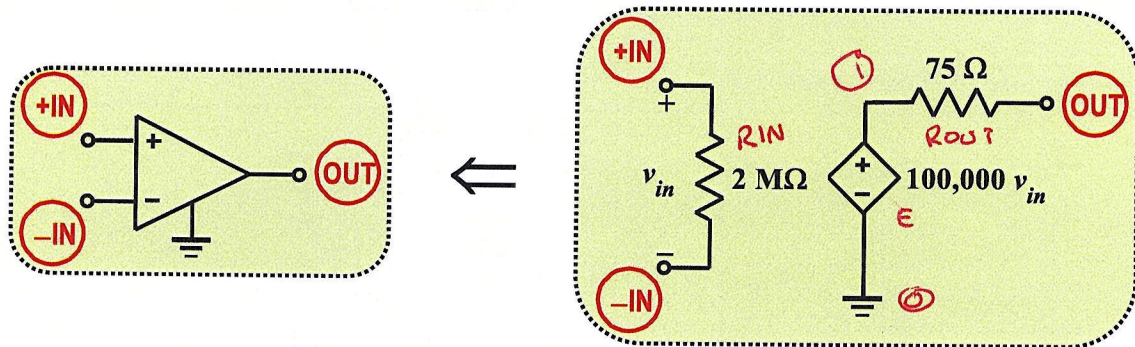


Homework Problem #069



Given $v_1(0) = 20\text{ V}$, $v_2(0) = -10\text{ V}$ and $v_3(0) = -5\text{ V}$, use LTspice to plot $v_4(t)$ for $t \geq 0$. Use the model shown below to build a subcircuit model for the OpAmps.



```

.subckt opamp +IN -IN OUT
RIN +IN -IN 2Meg
E 1 0 +IN -IN 100k
ROUT 1 OUT 75
.ends opamp

C1 1 0 25u IC=20
R1 1 2 20k
C2 2 5 50u IC=-10
X1 0 2 5 opamp
R2 5 3 10k
C3 3 4 100u IC=-5
X2 0 3 4 opamp
R4 4 0 50k

.TRAN 2.5 UIC
    
```

```
EE2240 Fall 2021 Homework Problem #069.cir
EE2240 Fall 2021 Homework Problem #069.cir
.subckt opamp +in -IN OUT
RIN +IN -IN 2Meg
E 1 0 +IN -IN 100k
ROUT 1 OUT 75
.ends opamp
C1 1 0 25u IC=20
R1 1 2 20k
C2 2 5 50u IC=-10
X1 0 2 5 opamp
R2 5 3 10k
C3 3 4 100u IC=-5
X2 0 3 4 opamp
R4 4 0 50k
.TRAN 2.5 UIC
.END
```

