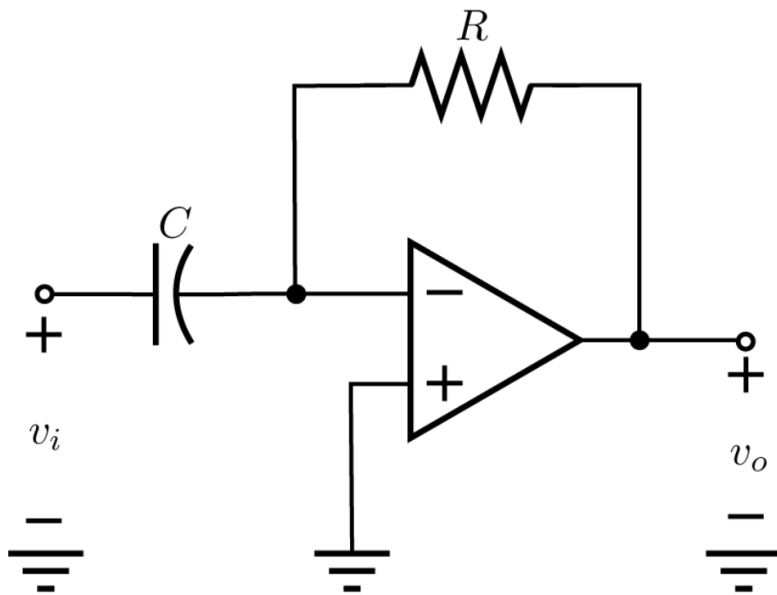


Problem 2.4.2



For the circuit above, $R = 5\text{k}\Omega$ and $C = 2\mu\text{F}$. $v_{in} = \sin(1000t)\text{V}$, what is the value of v_o at $t = 4\pi/3\text{ms}$?

```
syms vin(t) vo(t)
C = 2e-6;
R = 5e3;
vin(t)= diff(sin(1000*t))
```

```
vin(t) = 1000 cos(1000 t)
```

```
% Compute analytic solution of a symbolic equation
vo(t) = -R*C*vin
```

```
vo(t) = -10 cos(1000 t)
```

```
vo(4e-3*pi/3)
```

```
ans = 5
```