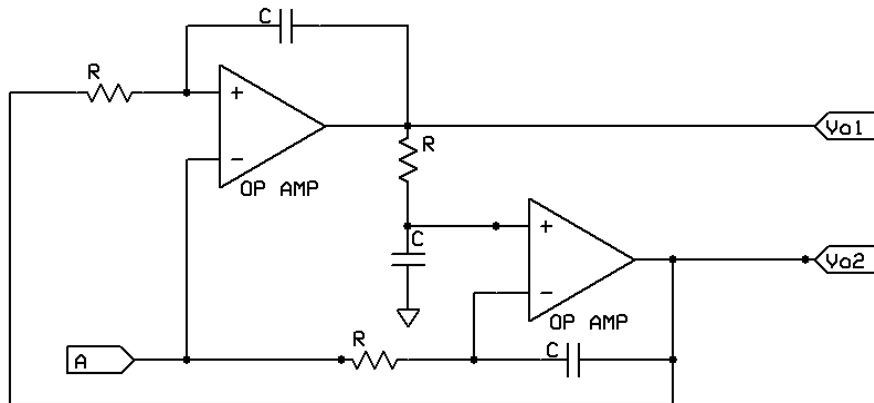


## Handout RC Oscillators

The following schematic represents an oscillator topology denominated Quadrature oscillator. The distinctive characteristic of this oscillator is that it generates two signals,  $V_{o1}$  y  $V_{o2}$ , which keep a fixed phase difference between them.



Please, answer the following questions related to the above schematic:

1. Assuming that node A is set to ground, calculate the loop gain of the oscillator in the Laplace domain.
2. From the previous expression, give the expression for the frequency of oscillation.
3. Can you determine which is the phase difference between the two outputs,  $V_{o1}$  and  $V_{o2}$ .