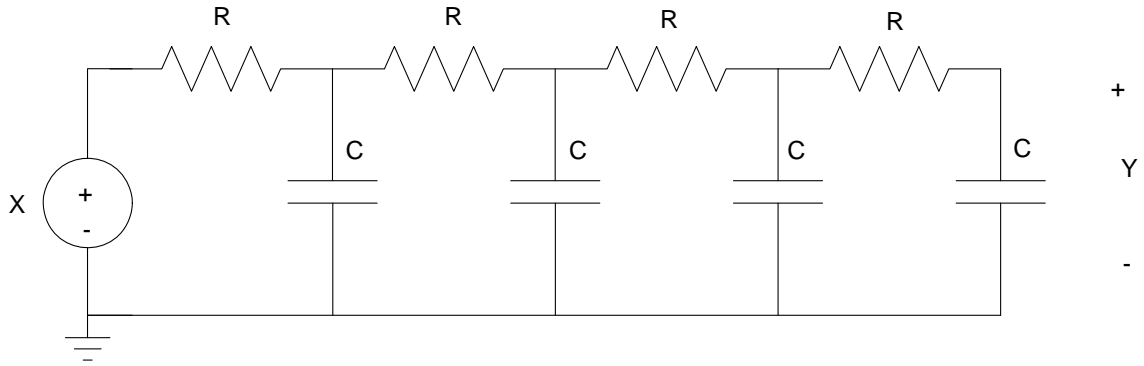


ECE 321 - Homework #32

Circuits with Periodic Inputs

$x(t)$ and $y(t)$ are related by the following circuit:



$$R = 100k, C = 1\mu F$$

Find $y(t)$ for the following inputs:

1) $x(t) = x(t + 2\pi)$

$$x(t) = \begin{cases} t(\pi - t) & 0 < t < \pi \\ 0 & \text{otherwise} \end{cases}$$

2) $x(t) = x(t + \pi)$

$$x(t) = \begin{cases} 1 & 0 < t < 1 \\ 0 & \text{otherwise} \end{cases}$$

3) $x(t) = x(t + \pi)$

$$x(t) = \begin{cases} t & 0 < t < 1 \\ 0 & \text{otherwise} \end{cases}$$