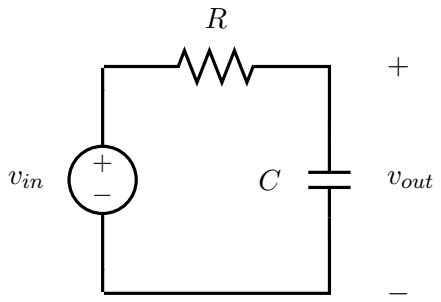
EENG307: Intro to Feedback Control

Fall 2020

Homework Assignment #9

Quiz #2

Quiz Question Monday: The following circuit implements a low-pass filter, in that the output v_{out} is reduced when the input is a high frequency sinusoid.



(a) Let $R = 100\ \Omega$ and $C = .01$ F. Find the transfer function $\frac{V_{out}(s)}{V_{in}(s)}$.

(b) Sketch the Bode plot for this system

(c) According to your sketch, at what frequency is the magnitude of the output 10 times smaller than the magnitude of the input?

What is the answer to part (c)?

(a) 10 rad/s

(b) π rad/s

(c) $\sqrt{2}$rad/s

(d) 1 rad/sec

(e) $\frac{1}{10}$rad/sec