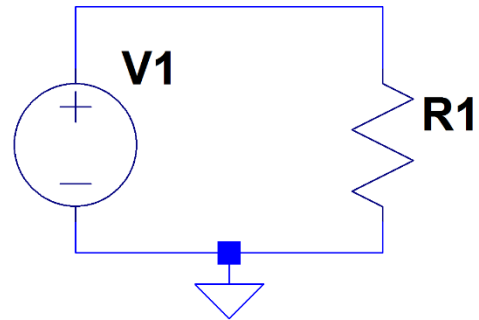


Part A: Multiple Choice (20 Points)

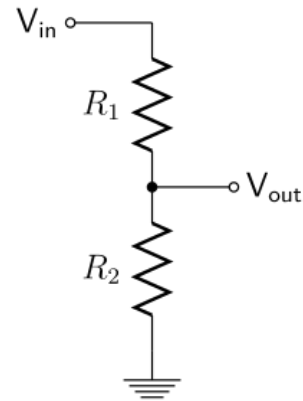
The following questions are found on LMS under Quiz 2 Part A. This sheet provides figures and a general restatement of each question.

1. (3 Pts) Ohm's Law: What is the current I passing through the resistor R_1 due to the voltage source V_1 ?



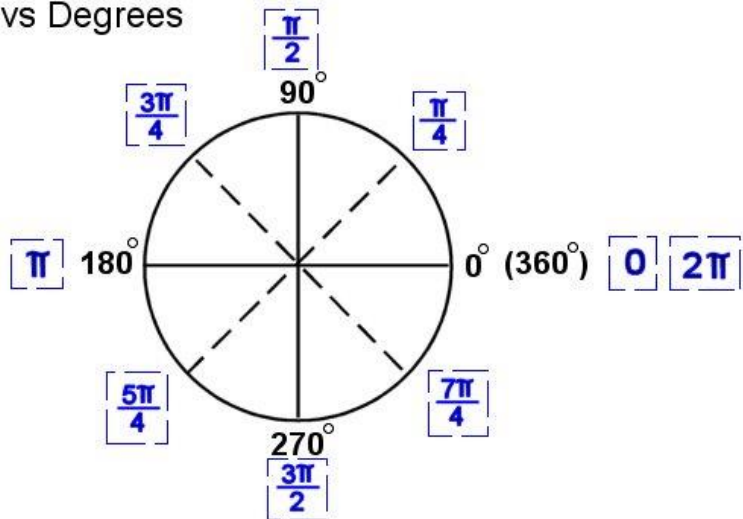
2. (3 Pts) Power to Resistor: What is the power delivered to the resistor in the circuit of question 1?

3. (4 pts) Decibels – For a simple voltage divider with two resistors R_1 and R_2 , and the output taken across R_2 , find the number of decibels (dB) for the output to input ratio. Both the magnitude and sign must be correct.

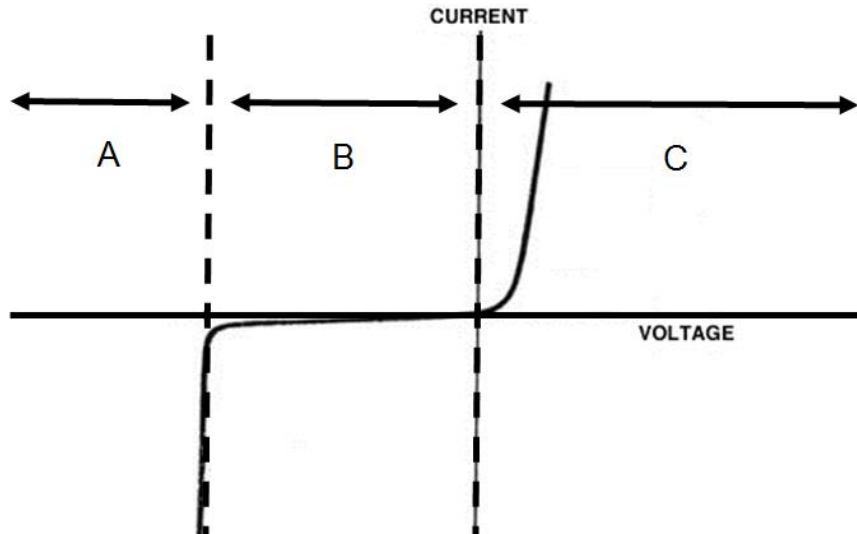


4. (3 pts) Radians vs. Degrees
Convert expressions given in radians to degrees.

Radians vs Degrees

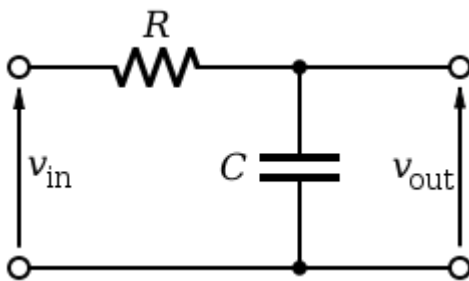


5. (3 pts) Diode Operating Regions – There are three voltage ranges shown in the realistic diode I-V curve below: the Breakdown Region, The Forward Bias Region and the Reverse Bias Region. Identify which region is which.

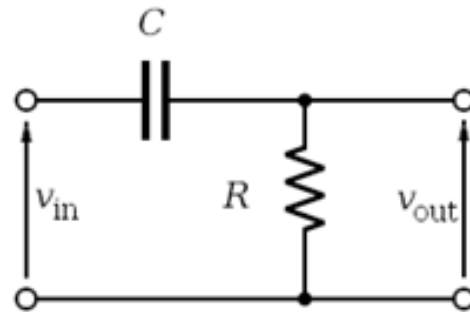


6. (4 pts) Filters

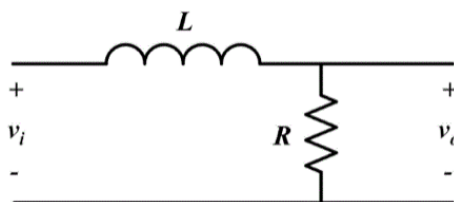
One of the most characteristic points in an RC or RL filter, is the corner frequency. For the simple filters shown in the figure, what is the magnitude and phase shift of the transfer function at its corner frequency? The figures below were found at various locations online.



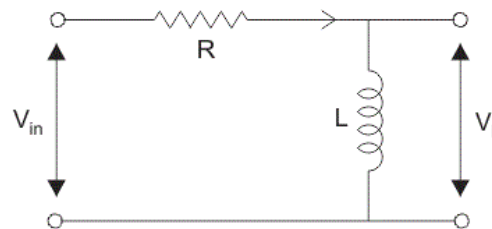
Circuit A



Circuit B



Circuit C



Circuit D