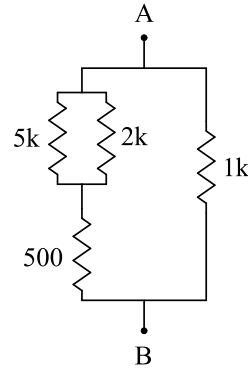
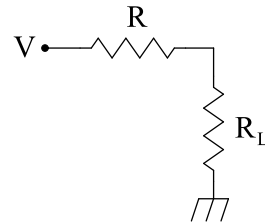


1. What is the net resistance between points A and B in the network shown?



2. Calculate the power $P = I^2 R_L$ dissipated by the load resistor R_L in the circuit shown. For given V and R , what value of R_L gives the maximum possible P , and what is that value?



3. Recall that a capacitor has complex impedance $Z_C = 1/(i\omega C)$, an inductor has impedance $Z_L = i\omega L$, and a resistor has impedance $Z_R = R$. Using this and the rules for combining impedances, calculate the net impedance from A to B for each of the following circuits. Simplify your answer to a form $Z_{tot} = (a + ib)/c$ for real a, b, c , and evaluate Z_{tot} at $\omega = 1/\sqrt{LC}$.

