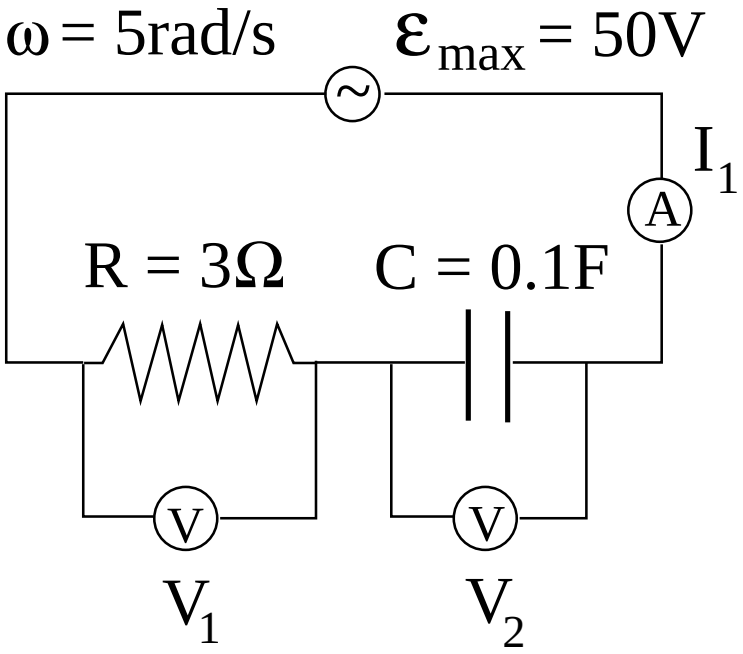
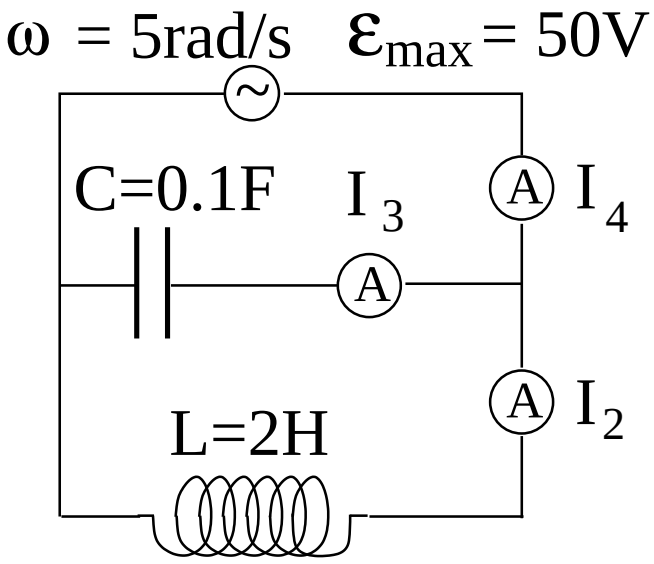
AC Circuit Application (7)

Consider the two ac circuits shown.

(a) In the circuit on the left, determine the current amplitude I_1 and the voltage amplitudes V_1 and V_2.

(b) In the circuit on the right, determine the current amplitudes I_2, I_3, and I_4.



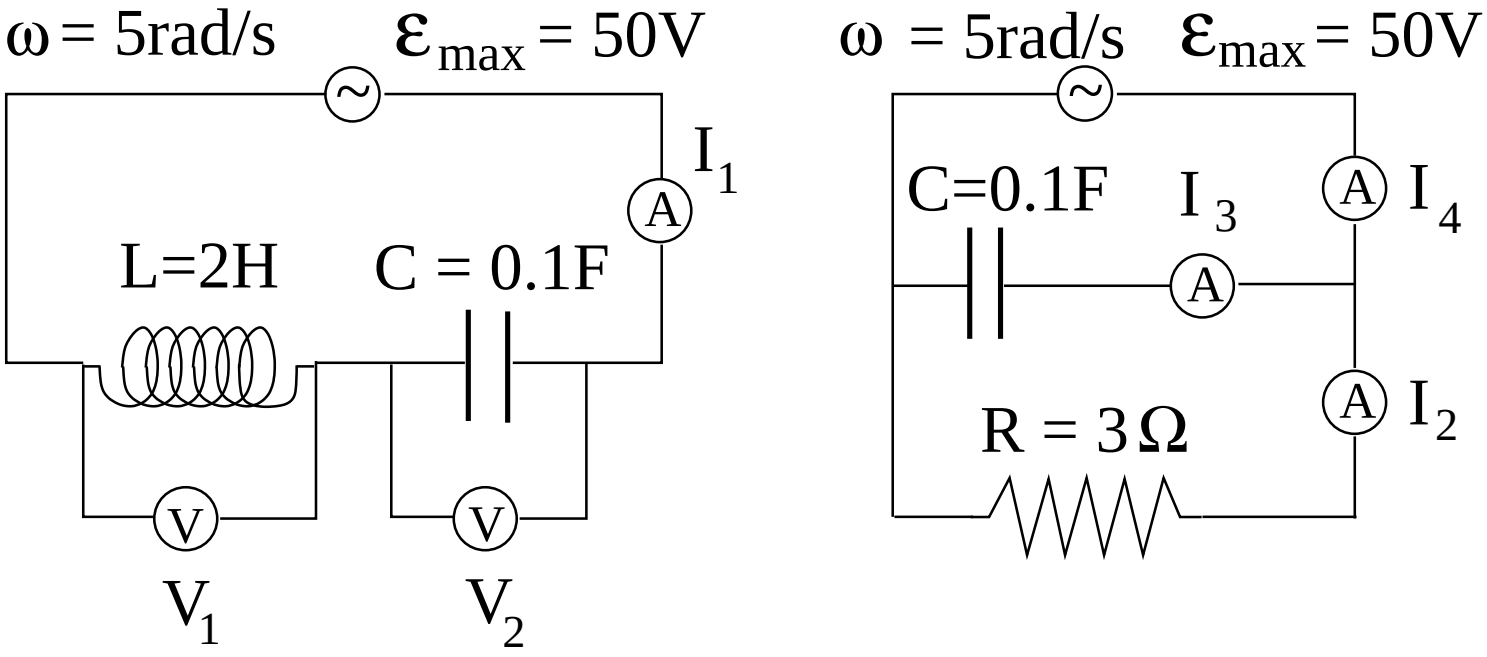


AC Circuit Application (8)

Consider the two ac circuits shown.

(a) In the circuit on the left, determine the maximum value of current I_1 and the maximum value of voltages V_1 and V_2.

(b) In the circuit on the right, determine the maximum value of currents I_2, I_3, and I_4.

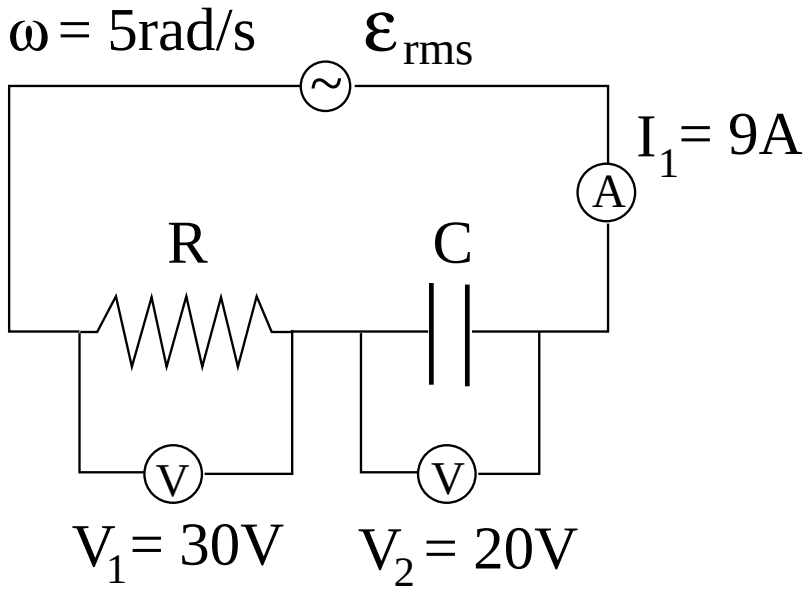


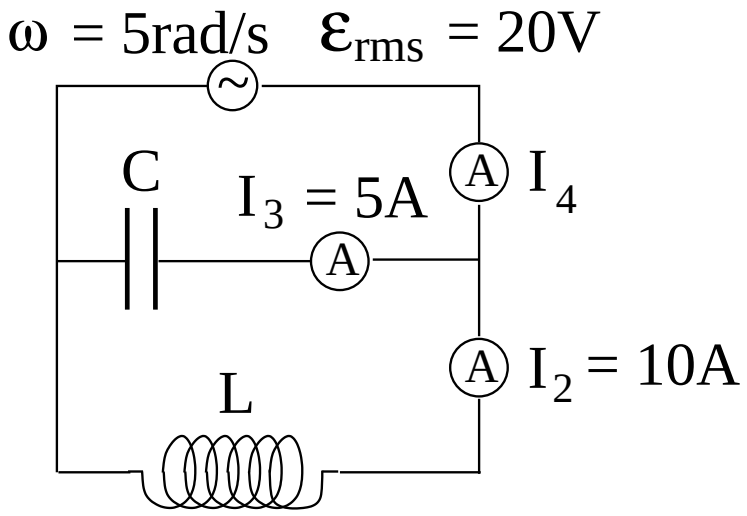
AC Circuit Application (9)

In the two ac circuits shown the ammeter and voltmeter readings are rms values.

(a) In the circuit on the left, find the resistance R of the resistor, the capacitance C of the capacitor, the impedance Z of the two devices combined, and the voltage $\mathcal{E}_{rms}$ of the power source.

(b) In the circuit on the right, find the capacitance C of the capacitor, the inductance L of the inductor, the impedance Z of the two devices combined, and the rms value of the current I_4.





AC Circuit Application (10)

In the two ac circuits shown the ammeter and voltmeter readings are rms values.

(a) In the circuit on the left, find the capacitance C of the capacitor, the inductance L of the inductor, the impedance Z of the two devices combined, and the voltage $\mathcal{E}_{rms}$ of the power source.

(b) In the circuit on the right, find the capacitance C of the capacitor, the resistance R of the resistor, the impedance Z of the two devices combined, and the rms value of the current I_4.