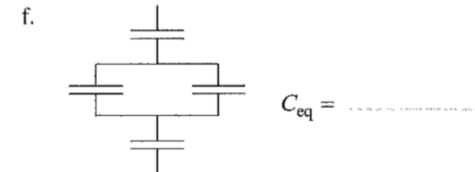
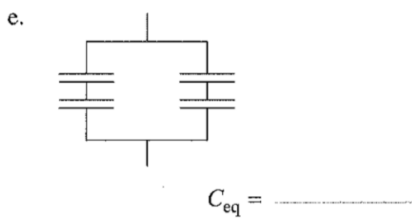
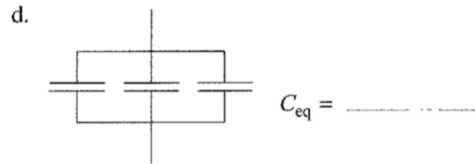
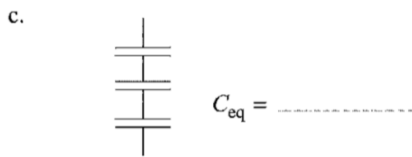
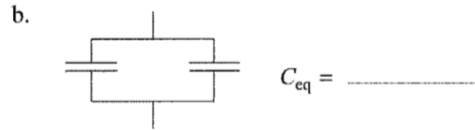
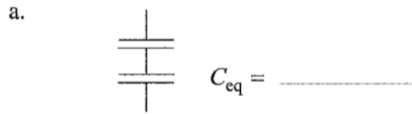
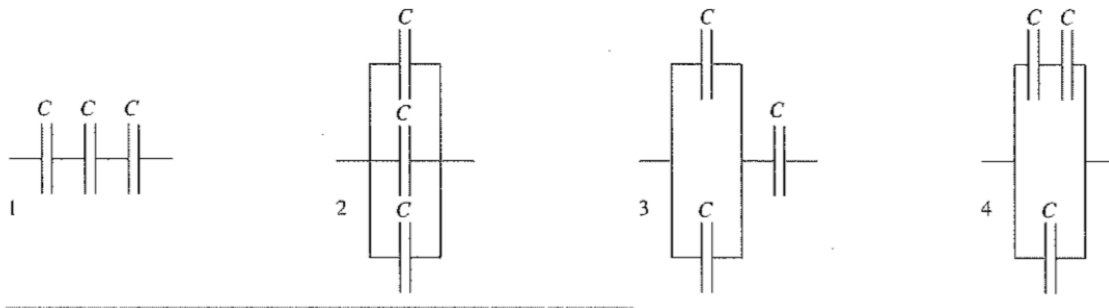


### Ch. 29 (capacitors) and Ch. 31 (circuits) Conceptual Questions

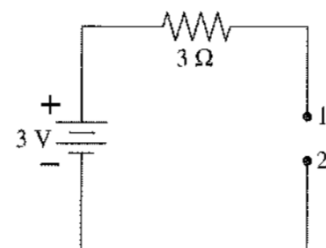
1. Each capacitor in the circuits below has a capacitance of  $C$ . What is the equivalent capacitance of each group of capacitors?



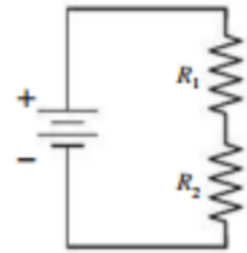
2. Rank in order, from largest to smallest, the equivalent capacitance ( $C_{eq}$ ) of each of the four groups of capacitors.



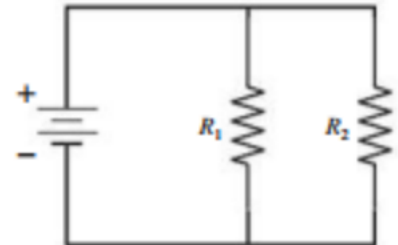
3. The wire is broken on the right side of the circuit. What is the potential difference ( $\Delta V_{12}$ ) between points 1 and 2? Explain your reasoning.



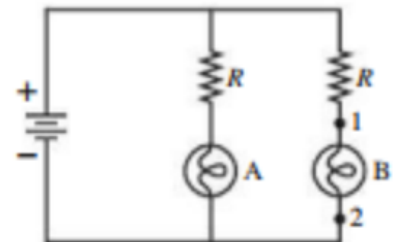
4. The circuit to the right has two resistors, with  $R_1 > R_2$ . Which of the two resistors dissipates the larger amount of power? Explain your logic.



5. The circuit to the right also has two resistors, with  $R_1 > R_2$ . Which of the two resistors dissipates the larger amount of power? Explain your logic.



6. Bulbs A and B in the diagram to the right are identical, and both are glowing. Bulb B is then removed from its socket. Does the potential difference  $\Delta V_{12}$  between points 1 and 2 increase, decrease, stay the same, or become zero? Explain.



7. The diagram to the right shows voltage as a function of time of a capacitor as it is discharged (separately) through three different resistors. Rank, in order from largest to smallest, the values of the resistances  $R_1$  to  $R_3$ .

