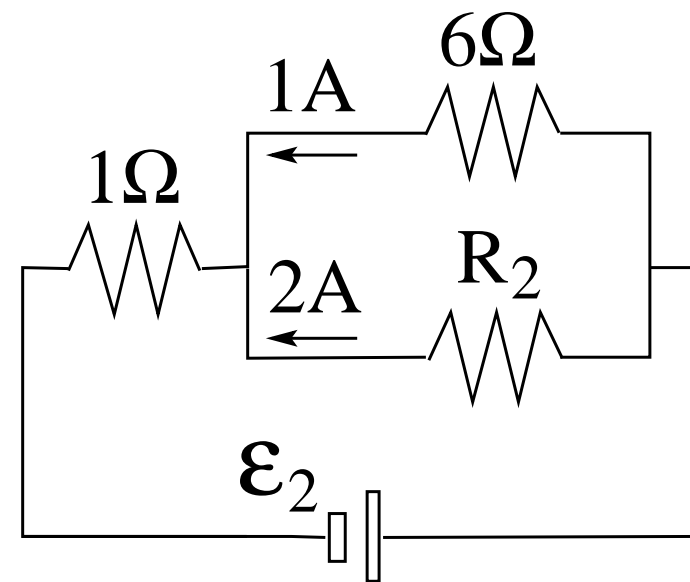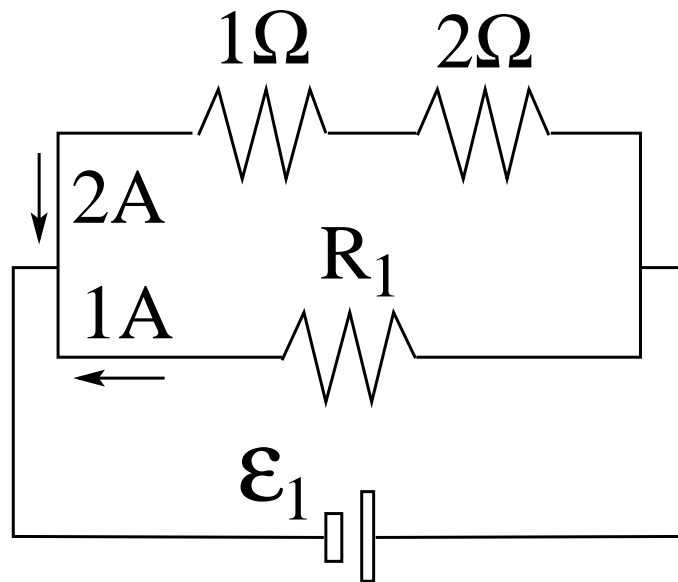Consider the two resistor circuits shown.

(a) Find the resistance R_1.

(b) Find the emf $\mathcal{E}_1$.

(c) Find the resistance R_2.

(d) Find the emf $\mathcal{E}_2$.
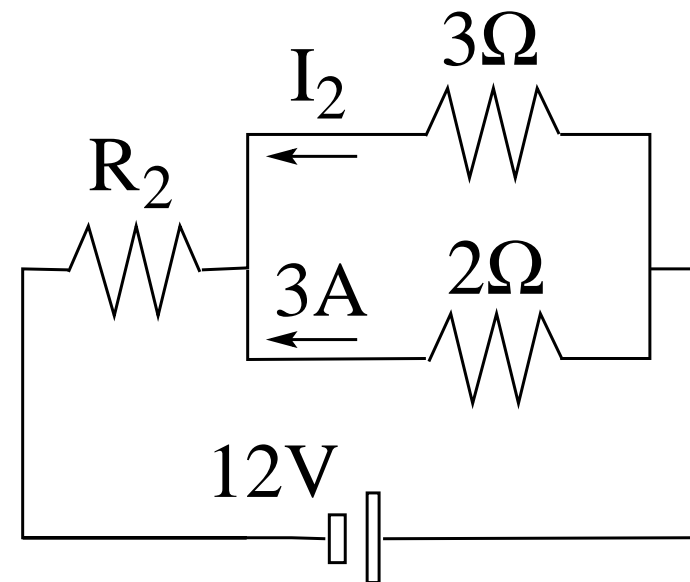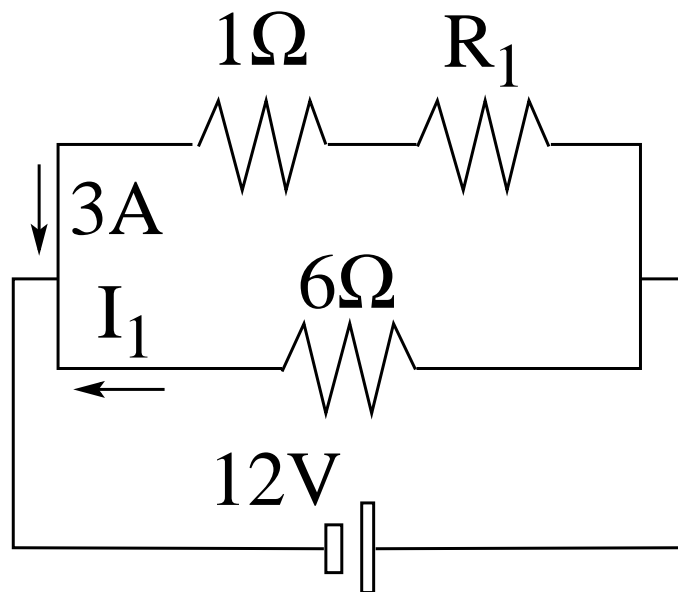
Consider the two resistor circuits shown.

(a) Find the resistance R_1.

(b) Find the current I_1.

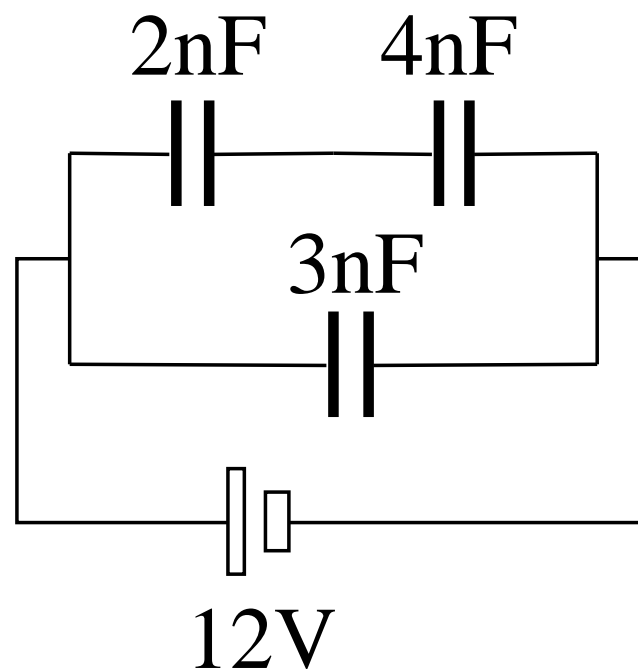(c) Find the resistance R_2.

(d) Find the current I_2.
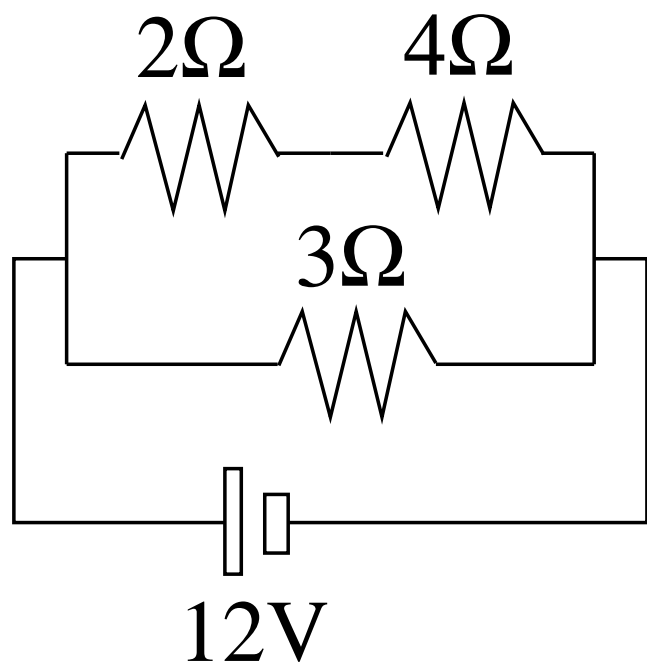
Consider the rsistor and capacitor circuits shown.

(a) Find the equivalent resistance R_{eq}.

(b) Find the power P_2, P_3, P_4 dissipated in each resistor.

(c) Find the equivalent capacitance C_{eq}.

(d) Find the energy U_2, U_3, U_4 stored in each capacitor.
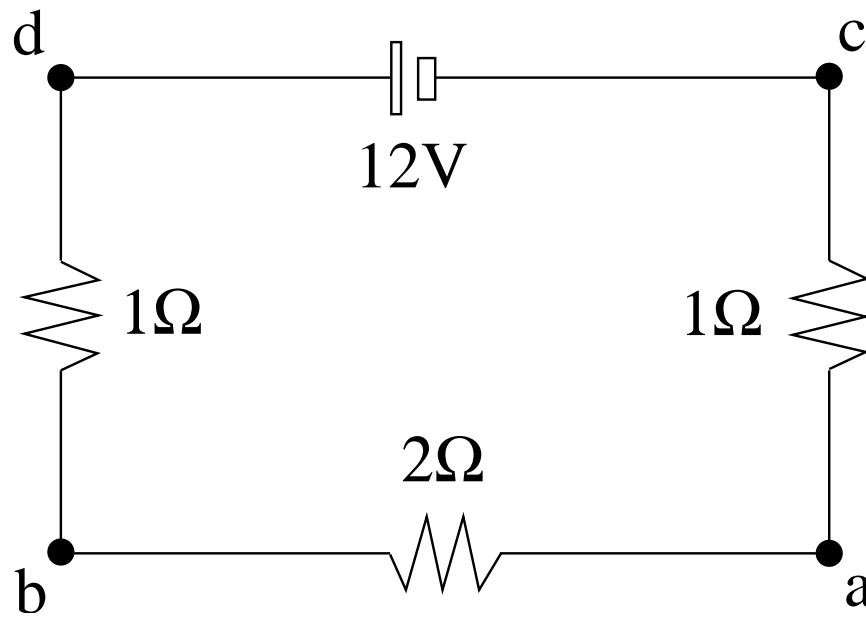
Consider the resistor circuit shown.

(a) Find the direction of the current I (cw/ccw).

(b) Find the magnitude of the current I.

(c) Find the voltage $V_{ab} = V_b - V_a$.
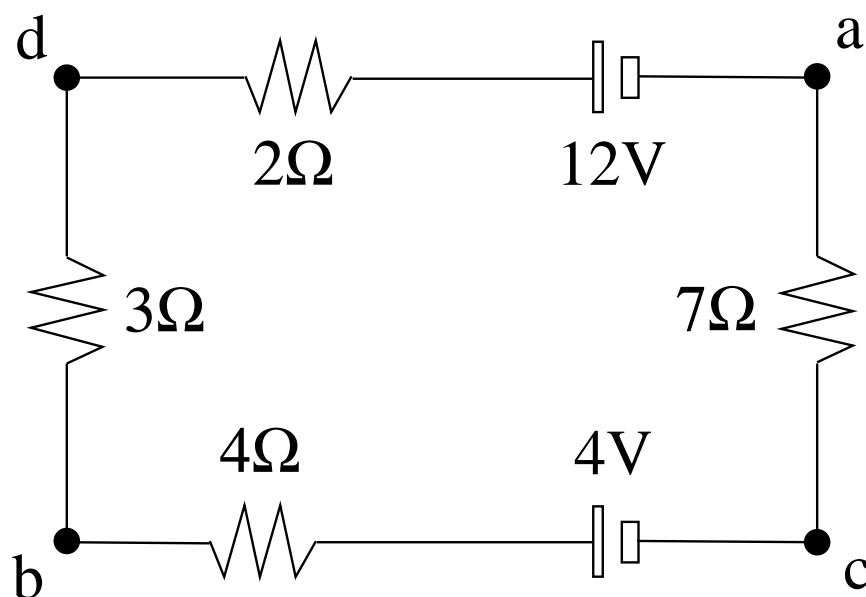
(d) Find the voltage $V_{cd} = V_d - V_c$.

Consider the resistor circuit shown.

(a) Find the direction (cw/ccw) of the current I in the loop.

(b) Find the magnitude of the current I in the loop.

(c) Find the potential difference $V_{ab} = V_b - V_a$.
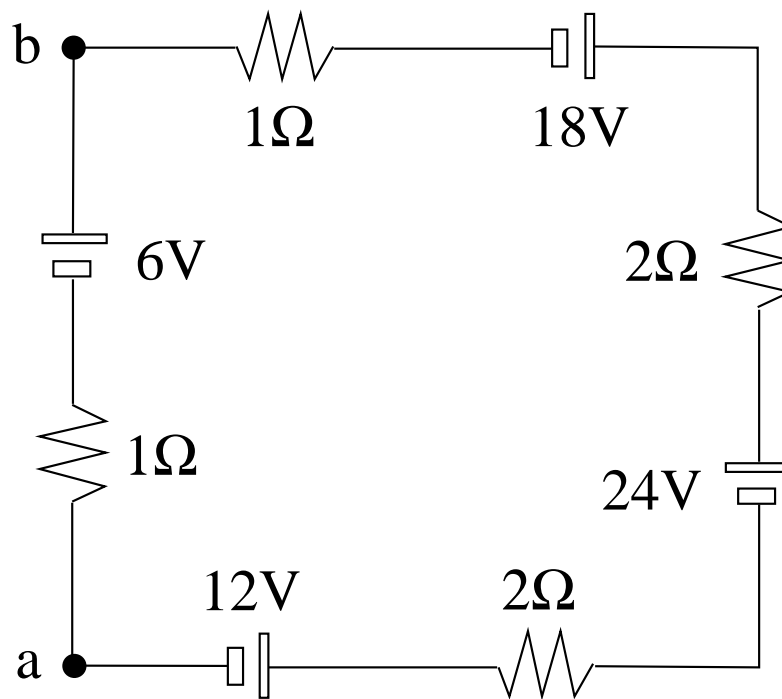
(d) Find the voltage $V_{cd} = V_d - V_c$.

Consider the resistor circuit shown.

(a) Guess the current direction (cw/ccw).

(b) Use the loop rule to determine the current.

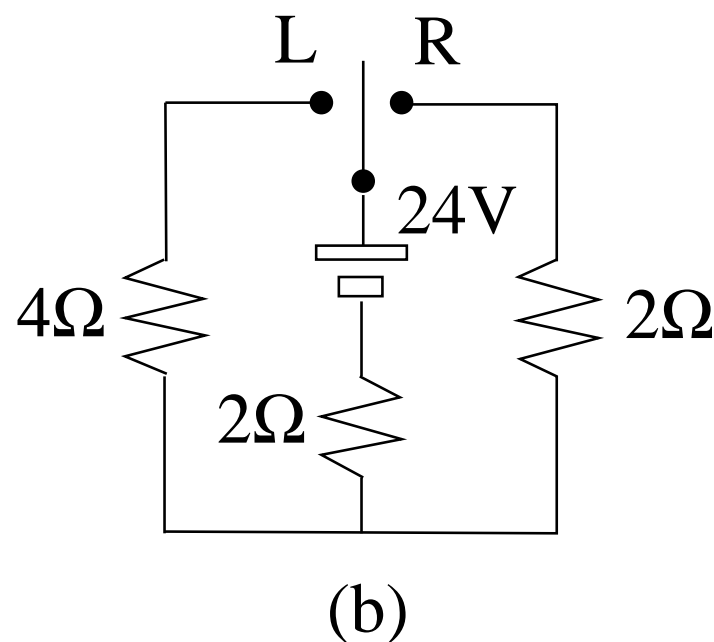(c) Find $V_{ab} \equiv V_b - V_a$ along two different paths.

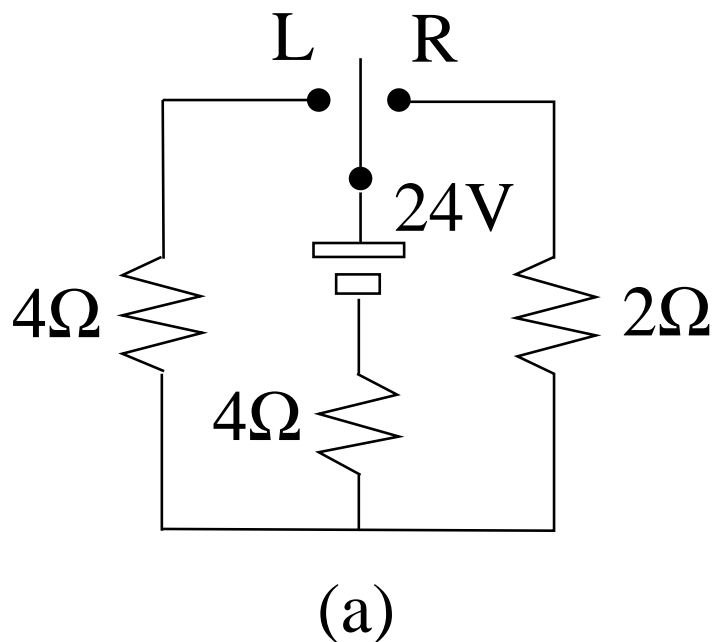Consider two 24V batteries with internal resistances (a) $r = 4\Omega$, (b) $r = 2\Omega$.

- Which setting of the switch (L/R) produces the larger power dissipation in the resistor on the side?

(a)   (b)

Consider the circuit of resistors shown.

- Find the equivalent resistance R_{eq}.

- Find the currents $I_1, \ldots, I_5$ through each resistor and the voltages $V_1, \ldots, V_5$ across each resistor.

- Find the total power P dissipated in the circuit.

$$R_1 = 6\Omega$$

$$R_3 = 4\Omega$$

$$R_2 = 12\Omega$$

$$R_4 = 3\Omega \qquad R_5 = 5\Omega$$

$$\varepsilon = 12V$$