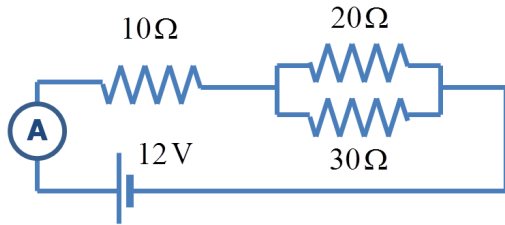
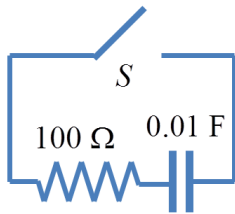


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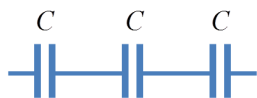
P1 For the circuit shown below, calculate the current through the ammeter.



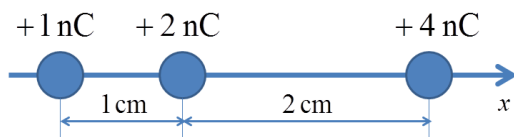
P2 In the circuit below, the capacitor is charged to 10 V and then the switch is closed.
What will be the current in the circuit after 2 s?



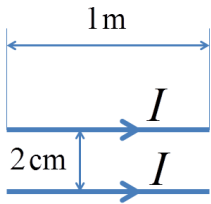
P3 A circuit consists of three identical capacitors connected in series. Each one is a parallel-plate capacitor with plates of area 500 cm^2 separated by a distance of 0.1 cm . Find equivalent capacitance of the circuit.



P4 Three charges $+1\text{ nC}$, $+2\text{ nC}$, and $+4\text{ nC}$ are positioned as shown in the figure. What is the force acting on each charge?



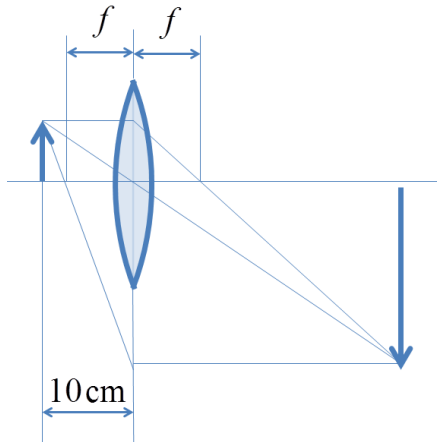
P5 Two parallel wires of a length of 1 m each carrying a current of 0.1 A, are separated by 2 cm. What is the force between the wires?



P6 The magnetic field detected at a distance of 10 cm from a long wire carrying a current is found to be 1×10^{-6} T. What is the current in the wire?

P7 Find the focal length of a compound lens made of two converging lenses with focal lengths 10 cm and 30 cm.

P8 When an object is placed at 10 cm in front of a converging lens, the lateral magnification is -3 . What is the focal length of the lens?



P9 In a single slit diffraction experiment, the width of the slit is 2×10^{-5} m and the distance from the slit to the screen is 2 m. If the beam of light of wavelength 550 nm passes through the slit and forms a diffraction pattern on the screen, what is the linear distance on the screen from the center of the diffraction pattern to the second dark fringe?

P10 In a photoelectric effect experiment, the cathode made of chromium (work function $\varphi = 4.5 \text{ eV}$) is irradiated with ultraviolet light of wavelength 200 nm. What is the stopping potential?