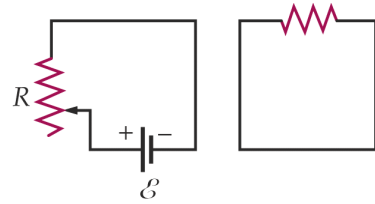
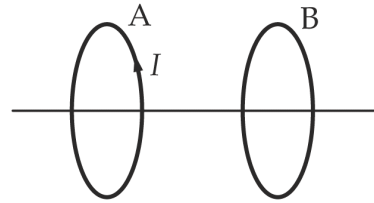


PHYS1022 Electricity and Magnetism
Problem Sheet 10: tutorials

1. Give the direction of the induced current in the circuit, shown on the right in the figure, when the resistance in the circuit on the left is suddenly (a) increased and (b) decreased.



2. The two circular loops in the figure have their planes parallel to each other. As viewed from the left, there is a counterclockwise current in loop A. Give the direction of current in loop B and state whether the loops attract or repel each other if the current in loop A is (a) increasing and (b) decreasing.



3. A conducting loop of area 240 cm^2 and resistance 12Ω lies at right angles to a spatially uniform magnetic field. The loop carries an induced current of 320 mA . At what rate is the magnetic field changing?
4. The magnetic field inside a 20 cm diameter solenoid is increasing at a rate of 2.4 T/s . How many turns should a coil wrapped around the outside of the solenoid have so that the emf induced in the coil is 15 V ?