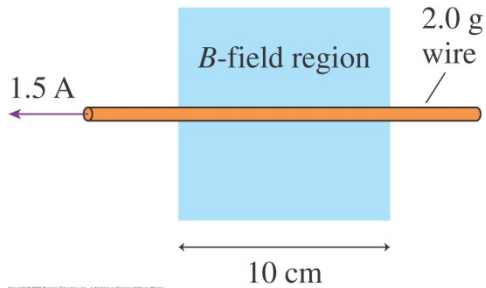


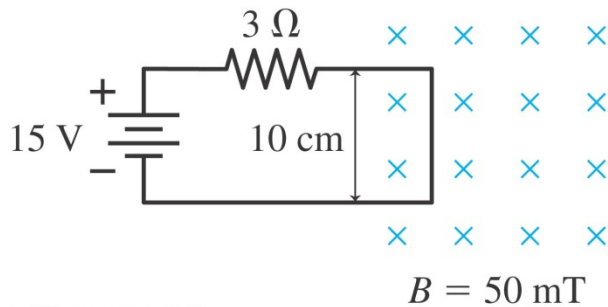
Problem 1

What magnetic field strength and direction will levitate the 2.0 g wire in the figure below.



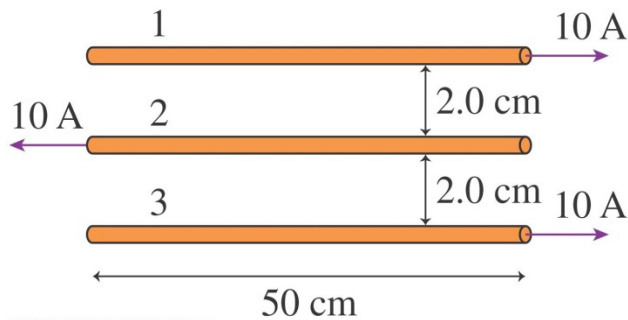
Problem 2

The right edge of the circuit in the figure below extends into a 50 mT uniform magnetic field. What are the magnitude and direction of the net force on the circuit?



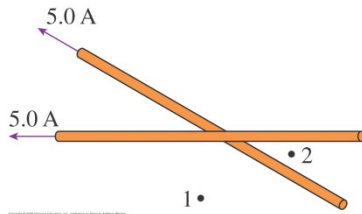
Problem 3

What is the net force (magnitude and direction) on each wire in the figure below?



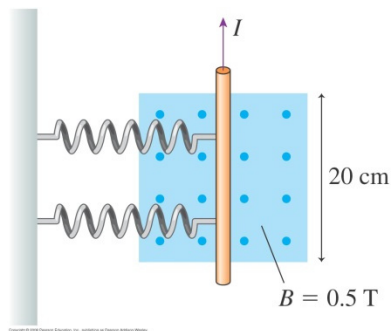
Problem 4

The two wires in the figure below cross at a 30° angle but do not make electrical contact. Each wire carries a 5.0 A current. Points 1 and 2 are each 4.0 cm from the intersection and equally distant from both wires. What are the magnitude and direction of the magnetic fields at points 1 and 2?



Problem 5

The two springs in the figure below each have a spring constant of 10 N/m . They are stretched by 1.0 cm when a current passes through the wire. How big is the current?



Problem 6

A conducting bar of length l and mass m rests at the left end of the two frictionless rails of length d in the figure below. A uniform magnetic field of strength B points upward.

(a) In which direction, into or out of the page, will a current (I) through the conducting bar cause the bar to experience a force to the right?

(b) Find an expression for the bar's speed as it leaves the rails at the right end?

