Practice Problems B on a current carrying conductor p. 692

1. A 6.0 m wire carries a current of 7.0 A towards the + x direction. A magnetic force of 7.0 x 10-6 N acts on the wire in the – y direction. Find the magnetic and direction of the magnetic field producing the force.

2. A wire 1.0 m long experiences a magnetic force of 0.50 N due to a perpendicular uniform magnetic field. If the wire carries a current of 10.0 A, what is the magnitude of the magnetic field.

3. The magnetic force on a straight 0.15 m segment of wire carrying a current of 4.5 A is 1.0 N. What is the magnitude of the component of the magnetic field that is perpendicular to the wire?

4. The magnetic force acting on a wire that is perpendicular to a 1.5 T uniform magnetic field is 4.4 N. If the current in the wire is 5.0 A, what is the length of the wire that is inside the magnetic field?