

Chapter 14

Describing Magnets

14.1 Attract

14.2 Because the north pole of a magnet is attracted to it

14.3 Because the earth is so big that there is not much dependence on where the magnet is; consequently, the force on each end of the compass is the same (just opposite). For the inductor, the effect must be greater close to the inductor; consequently, the force on the closer one is greater.

14.4 The left side (tail of the axis arrow drawn in the figure)

14.5 Toward the left

14.6 The magnetic field on each end is the same in magnitude and direction and thus the force on each end of the magnet is the same (in magnitude and opposite in direction)

14.7 (a) toward, (b) opposite

14.8 westward (opposite the rotation of the earth)

14.9 Indicate the position of the wire by a dot. The magnetic field should be indicated by arrows oriented the opposite way as that shown in figure 14.7(a)

- 14.10 Because the bottom parts of the loops and the top parts of the loops contribute magnetic fields that are opposite in direction outside the solenoid but in the same direction inside the solenoid
- 14.11 (a) toward planet A , (b) toward planet B , (c) toward planet A , (d) toward planet B , (e) zero
- 14.12 (a) away from particle A , (b) toward particle B , (c) away from particle A , (d) toward particle B , (e) toward particle B (or away from particle A)