

## Quiz 7B

PHYSICS 208, WINTER 2016

SECTION:

NAME:

### Modified Problem 27.34

A straight, 2.5-m wire carries a typical household current 1.5 A (in one direction) at a location where the earth's magnetic field is about  $5.5 \times 10^{-5}$  Tesla from south to north. Find the magnitude and direction of the force that our planet's magnetic field exerts on this wire if it is oriented so that the current in it is running (a) from west to east, (b) vertically upward, (c) from north to south. (d) Is the magnetic force ever large enough to cause significant effects under normal household conditions?