**PFC2 Chapter 17 Section 1 Guided Reading**

1. What is the physics definition of a field?
2. All interactions between matter and energy occur by way of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Name three examples of fields in which you may be immersed.
4. Fields create forces when they interact with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. The total force acting on an object is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of all forces from all fields that are present.
6. Forces from several fields are acting on the magnet in the picture below. Name three of those fields.

7. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ states that a field decreases as the square of the distance from the source of the field increases.
8. Why doesn’t magnetism follow the inverse square law?
9. The fastest that any field can spread is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
10. How long would it take for a signal from Earth to reach Jupiter?