Magnetism worksheet

1. What are the 2 criteria necessary for a substance to be considered a magnet?
   - domains
   - aligned domains

2. State where you will see repulsion or attraction between the bar magnets.
   - N  S  R  S  N  A  N

3. Draw a magnetic field for each of the following examples.
   A)
   - N  S
   - N  S

4. The circles below represent compasses. In each situation, draw the needles of the compasses, using an arrow to show the direction they point.
   - a) [Diagram]
   - b) [Diagram]
5. A soft iron rod is magnetized with a bar magnet, as shown in the diagram below. Identify the poles of the iron rod.

![Diagram of a bar magnet with N and S poles]

6. Draw the position of the needle in each of the compasses placed near the magnets or wire illustrated below.

   a) ![Compass I diagram]
   b) ![Compass II diagram]

7. Which of the illustrations below is an accurate representation of the magnetic field of a bar magnet? Explain your answer.

   a) ![Magnetic field diagram a)](image)
   b) ![Magnetic field diagram b)](image)

8. Maria sprinkles iron filings on a piece of cardboard placed on top of a bar magnet. Which configuration will the iron filings take?

   A) ![Configuration A)](image)
   B) ![Configuration B)](image)
   C) ![Configuration C)](image)
   D) ![Configuration D)](image)
9. A magnet is surrounded by a magnetic field which is shown by lines of force. Which one of the following diagrams correctly represents the magnetic lines of force around a magnet?

(A)  

(B)  

(C)  

(D)  

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10. Which of the following diagrams correctly shows the direction in which the compass needle will point?

(A)  

(B)  

(C)  

(D)  

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11. Among the following diagrams, which correctly illustrates a magnetic field?

A) 

B) 

C) 

D) 

12. Two magnets are placed end to end. Which diagram correctly illustrates the magnetic fields around these magnets?

A) 

B) 

C) 

D) 

13. A magnet creates what is known as a magnetic field. A compass can be used to show the magnetic field. Which of the following statements are true?

1. If a bar magnet is broken in two, each piece will only have one magnetic pole.
2. Like poles repel each other.
3. The needle of a compass is a small magnet.

A) 1 and 2  B) 1 and 3  C) 2 and 3  D) All are true