Name
 Date

 Teacher
 Period

Chapter 19 Review Worksheet

- 1. What is the difference between declination and inclination?
- 2. What type of material works best at increasing the magnetic flux density of an electromagnet?
- 3. What is magnetic permeability, what affects it?
- 4. Describe how a voltmeter and ammeter are connected in a circuit. Why are they connected that way?
- 5. What is the magnetosphere?
- 6. What is a galvanometer?
- 7. What is the weber?
- 8. What causes the Earth's magnetic field?
- Two wires run parallel to one another for a distance of 125 cm. One wire has a current of 15 A. The other has a current of 21 A. The wires are separated by a distance of 1.75 cm. what is the force between the wires? (Answer: 0.0045 N)

 $F = \frac{2(1 \times 10^{-7})(1.25 \times 10^{-7})(1.25 \times 10^{-7})}{(1.0175 \times 10^{-7})(1.25 \times 10^{-7})} = .0045 \times 10^{-7}$

 A 2.25 m long wire carries a current of 35 A. The wire runs perpendicular to a uniform magnetic field. If the magnitude of the force felt by the wire is 6.45 N, then what is the strength of the magnetic field? (Answer: 0.082 T)

F=BIL 6.45 = B(35A)(2.25) R=,082T

11. A wire has a current of 4.30 A running through it. At what perpendicular distance from the wire will the magnetic field strength be 3.7×10^{-5} T. (Answer: 0.023 m)

$$B = 2x \prod_{r} 3.7 \times 10^{-5} T = Z(1 \times 10^{-7})(4.30 \text{ A})$$

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12. A charged object travelling through a 5.43×10^{-4} T magnetic field at a velocity of 6.89×10^{6} m/s. It experiences a force of 4.8×10^{-9} N the magnetic field. What is the charge on the object? (Answer: 1.28×10^{-12} C)

$$F = B_{qv} + 8 \times 10^{-9} \text{ h} = (5.43 \times 10^{-4} \text{ T})(q)(6.89 \times 10^{6} \text{ h/s})$$

$$q = 1.28 \times 10^{-12} \text{ C}$$

First Right Hand Rule:

Sketch the magnetic field lines for each current carrying wire pictured below.



Second Right Hand Rule:		Third Right Hand Rule:	
Label the North and South Poles for each		Write the correct direction of the Force that	
electromagnet pictured below.		the magnetic field will exert on the moving	
		charge in each diagram below (Up, Down,	
		Left, Right, Into page, Out of Page).	
16)	17) 💫	18)	19)
		q	0 0 0 0 0 0 0
$ \varsigma\rangle$		►	0 0 0 0 0 0 0
		│	0 0 0 0 4 0 0 0
			0 0 0 0 0 0 0
↓ ↓			0 0 0 0 0 0 0
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		│	q
	S	Direction:	Direction:
		OUT OF	KELHT