# Name:	Date:	Period:
Gen Physics Magn	etism Review WS	4
Use the word bank at the end of the worksheet to fill	in the blanks belo	w. Some words or phrases may be
used more than once and some may be left over.		
Review the Concepts		
A magnetic field is produced by the		
• In a magnetic substance such as iron, the magnetic field	elds created by	do not
cancel one another out.		
Large clusters of magnetic atoms align to form		
• In nonmagnetic substances, electron pairs within the	atom spin in	; there
is no net magnetic field		
•, or the flow of e	electrons, produces a	magnetic field
Bending a current-carrying wire into coils		the magnetic field
The more coils, the	the ma	gnetic field
• Placing a piece of iron into a current-carrying coil cre	eates an	
A <i>moving</i> charged particle may be		by a magnetic field
Deflection is greatest for particles moving		to the magnetic field and
zero for particles moving	to th	ne field
Magnetic polarity comes in two flavors:	and	
Magnetic field lines run from	to	
• The Earth's magnetic field is produced by the charge ir	the planet's	set
in motion by the	of the Earth	
Earth's magnetic field appears to be		_, which scientists believe indicates
the poles are destined to		
According to Faraday's Law, a		within a coil of wire will
A transformer uses		to induce a voltage in
the secondary that is different from that in the primary		

- A changing magnetic field induces a(n)
- A changing electric field induces a(n) ______
- - Two versions (fill in the blanks with I, v, B or F):
 - 1. Magnetic field induced around a current-carrying wire



2. Force on a current-carrying wire or moving charge in an external magnetic field



- If you're dealing with a negative charge in an external magnetic field, you may use your _______
 to find the relative directions, but then drop the negative sign in your calculations
- In physics, a negative sign just means "opposite direction"
 - Ex. up = + down
 - - left = +_____
 - - in = +_____

For each of the following, fill in the given info, what you need to solve for, what equation(s) you will need to use, those equations with the given info filled in, and the final answer.

 A proton is launched into a uniform magnetic field of 3.5 T into the page. Inside the field, the proton experiences 5.2×10⁻¹¹ N of force to the left. What must be the speed and direction of the proton as it travels in the field?

Given:

Solve for:

Equation(s):

Eq. with given:

Solution:

A coil of wire containing 110 loops is placed in a magnetic field that oscillates between 7.3 T and 12.4 T every 1.3 s. If the induced voltage is 0.5 V, what must be the radius of the coil?

Given:

Solve for:

Equation(s):

Eq. with given:

Solution:

Word Bank

up	flip-flop
down	stay the same
left	vanish
right	induce a voltage
in	magnetic domains
out	motion of charge
magnetic field	intensifies
electric field	stronger
changing magnetic field	weakens
changing electric field	weaker
electric current	weakening
rotation	direction
north	opposite directions
south	same directions
positive	right angles
negative	right hand
spinning electrons	left hand
spinning protons	deflected
parallel	iron core
perpendicular	nothing
electromagnet	resistance
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