**IB Physics**

**Pre-Quiz 21.2**

Name

Favorite Band

**Show your work, circle your answers, and use sig figs to receive full credit.**

1. A loop or wire with a radius of 0.78 m is in the plane of this page, and is rotated so that the loop forms a 23.0o angle with the page. If there is a 3.72 T magnetic field into the page, and the rotation takes .015 s, what is the average EMF generated? Which way does it flow? (38 V, CW)

2. The wire below is 2.28 m long (really!) and is traveling through a 6.71 T magnetic field out of the page. What is its speed if there exists a potential of 41.6 V from one end to the other? Label the positive end of the wire. (2.72 m/s bottom is +)

3. A transformer has 350. primary windings, and 1600. secondary windings. What is the voltage in the primary if there is a voltage of 512 V (AC) in the secondary? (112 V)

4. You want to step 120. VAC down to 9.60 VAC with a transformer. What should be the number of secondary windings if you have 1800 primary windings? (144 windings)

5. A transformer steps 240 VAC down to 1.50 VAC. What current flows in the secondary if the primary side has 2.6 A flowing through it? (416 A)