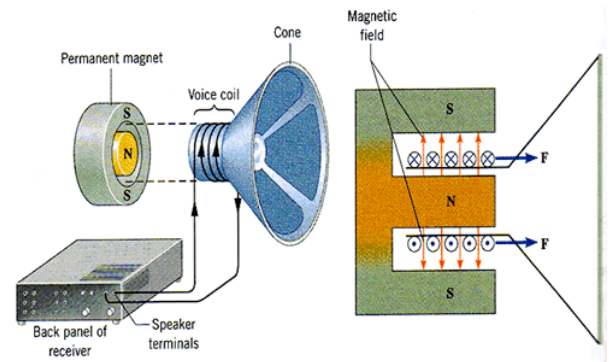
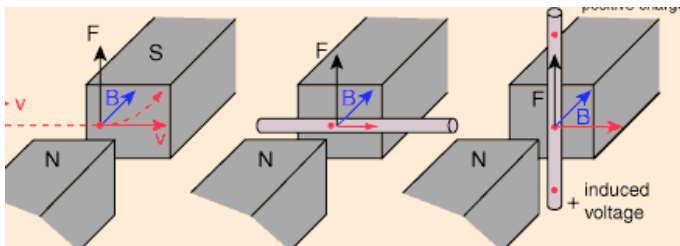
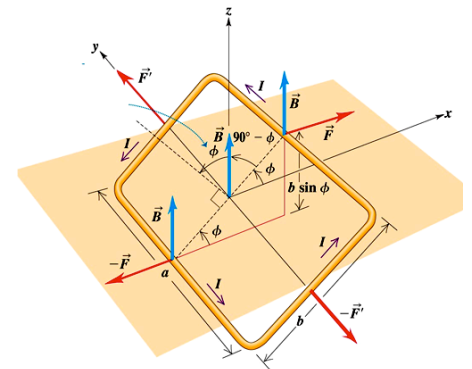
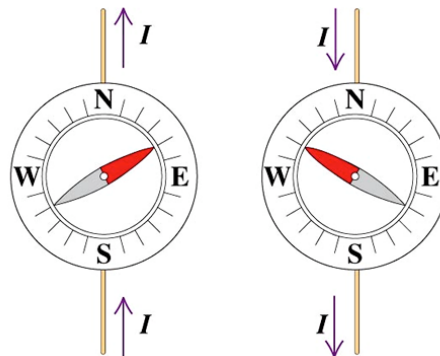
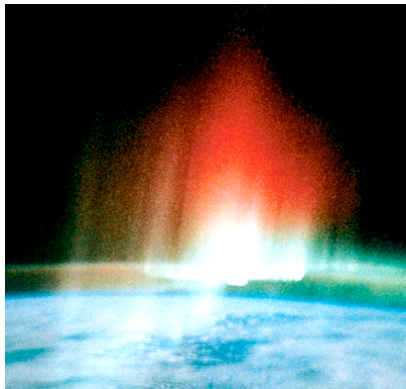


*I will make 3 different tests from the problems and questions below. No one will know which of the three tests they will get on Monday or Friday. I will also supply all the equations so, **you cannot have any 3x5 cards or notes.** You will be able to answer many of these questions in a few minutes.*

1 and 2) (5 pts) MC Question. I will ask you a question about one of these **diagrams.**



3) (5pts) MC Question. Homeward Bound or Spin Doctor Question or Conceptual Analysis 20.6?

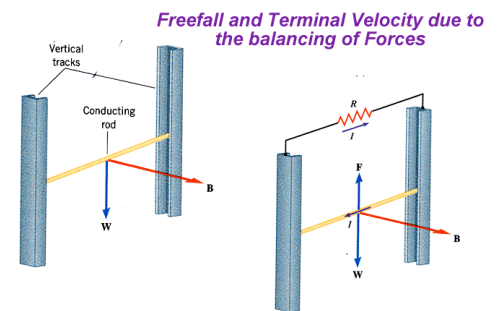
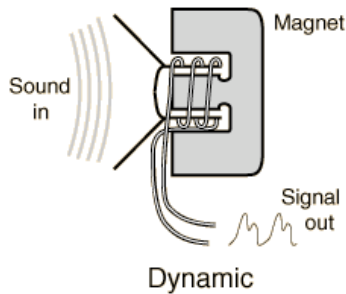
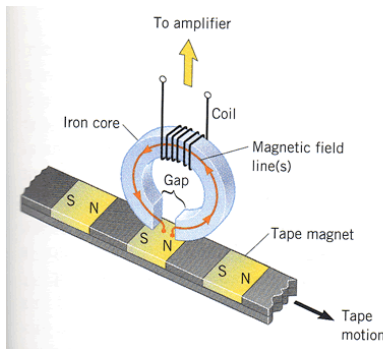
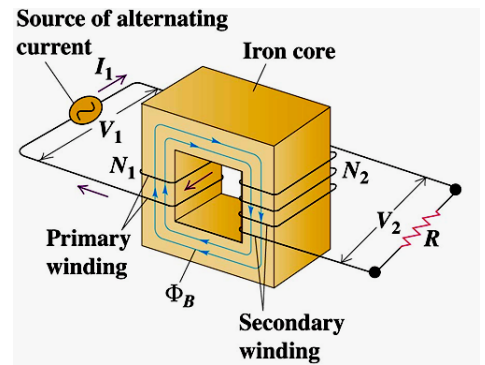
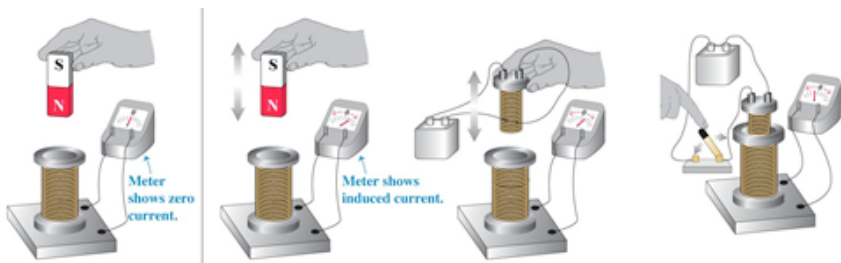
4) (5pts) Chap 20 - **Multiple Choice Question** (2, 3, 4, or 5) I can change the directions. They all represent The force on a moving charge or current.

5, 6, 7) (5pts @) **The Mass Spectrometer** - I will show you a diagram from my presentation on the web and ask 3 or 4 questions and a calculation about this device. Try to imagine the questions. I may leave something out and ask you to draw it in. Study these Chap 20 Problems 21, 22, or 23.

8) (8pts) Chap 20 **Basic Problem** - One of these 13, 31 or 41

9) (12pts) Chap 20 **Medium Problem** - One of these 24, 25, or 97

10 and 11) (5 pts @) MC Question. I will ask you a question about one of these **diagrams**.



12 and 13) (5pts @) MC Questions. **Magnetic Storm Video**.

14) (5pts) Tether Power or Plug Free Power or Eddy Currents figure 21.20

15 and 16) (5pts @) Definition of Lenz's Law. The **Falling Magnet in the Tube**. I will ask you to draw some part of the diagram I drew and answer a question. I demoed this example and it's a movie!

17) (5pts) Chap 21 - **Multiple Choice Questions** 6, 8, 11, 12, 14, 15. I can change the directions. They all represent Faraday's Law.

18) (8pts) Chap 21 **Basic Problem** - One of these 4, 9, 11, 15, 16, 40, 42

19) (12pts) Chap 21 **Medium Problem** - One of these 25, 26, or 64

Equation Sheet (I will give you any equation or constant you want)

Chapter 20 Equations - $W=qV=1/2mv^2$, $F_E=qE$, $F_B=qvB=ILB$, $F_C=mv^2/r$, $B=\mu_0 I/2\pi r$, $B=\mu_0 I/2r$

$[\mu_0 = 4\pi \times 10^{-7} \text{ T}\cdot\text{m/A}$, charge on an electron = $-1.6 \times 10^{-19}\text{C}$, $m_e = 9.11 \times 10^{-31}\text{kg}$, $m_p = 1.67 \times 10^{-27}\text{kg}$]

Chapter 21 Equations - Magnetic Flux $\Phi=BA\cos\theta$, Faraday's Law $\mathcal{E} = -NBA\cos\theta/\Delta t = vBL$,
The Transformer Equation $V_2/V_1=N_2/N_1$