

**Physics 2 M\$2, HS1b**  
**Week #13**

**November School Wide Memory Verse:**

He redeemed us in order that the blessing given to Abraham might come to the Gentiles through Christ Jesus, so that by faith we might receive the promise of the Spirit. Galatians 3:14

**Topics/Content/Skills: Circular Motion Revisited/ Electricity begin**

**Skills:**

- More Practice with Circles
- More Review of Electricity, Circuits, Capacitors, magnets

**Vocabulary/Key Terms/Formulas:**

Period, FBD, Statics, Time of Flight, Constant Acceleration, Kinematics(  $d_f$  eqn), Projectile motion, Components of forces, Vectors, Circular motion (  $F_c = mv^2/r$  ;direction of A and V), Torque (  $rxF = \tau$ ; Review), Impulse (  $F\Delta t = \Delta P$ ), Period of a pendulum

**Homework/Classwork: (All homework is due the next class day unless indicated.)**

	<b><u>In Class</u></b>	<b><u>Homework Due in this Class</u></b>
<b><u>This Monday</u></b>	<b><u>Final TOWER Work</u></b> <b><u>Tower Registration</u></b>	<b><u>#38 HAND IN</u></b>
<b><u>Tuesday</u></b>	<b><u>Tower BREAK!</u></b>	<b><u>HMWRK SHEET #39 HAND IN!</u></b> Take Home Mastery work ( Towers should be done) <b><u>Please Hand this to Mr. Dixon on Tuesday- even if we do not have class due to the break!</u></b>
<b><u>Wednesday</u></b> <span style="color: cyan;">Not HS1</span>	<b><u>Help your folks with Thanksgiving meal!...</u></b>	No Class- Half a Day!
<b><u>Thursday</u></b> <span style="color: cyan;">HS1 Double</span>	<b><u>Give Thanks with a Grateful heart,</u></b>	No Class- Be Thankful!!!
<b><u>Friday</u></b>	<b><u>No Class on Fridays</u></b>	<b><u>NA</u></b>
<b><u>Next Monday</u></b>	First Day of 2 <sup>nd</sup> Term!	<b><u>#40 First Work of the new term!</u></b>

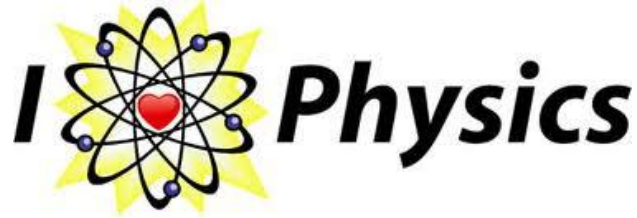
**Tests/Due Dates:** There will be No quiz this week, only Mastery work.

**Test/Quiz Topics:** *Electrostatics& Dynamics, Statics, Projectile motion, Pendulums & Spring Periods, Plus Vector Components, Circular motion, Kinematics, Torque, Impulse, Atwood machines, 1-2 Step Algebra problems, STEM Review, Extra ordinary Review, Graphs of DVAJ, Basic Trigonometry.*

**Special Events/News:**

The competition is THIS TEUSDAY, Nov. 22, 2011! TOWERS WILL BE IMPOUNDED (Collected and stored) on MONDAY by 4:15PM

NAME: \_\_\_\_\_ GRADE: \_\_\_\_\_

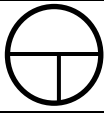
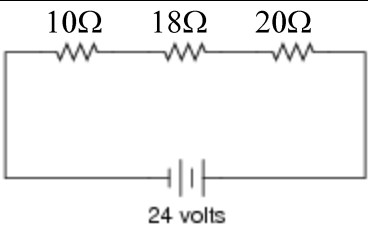
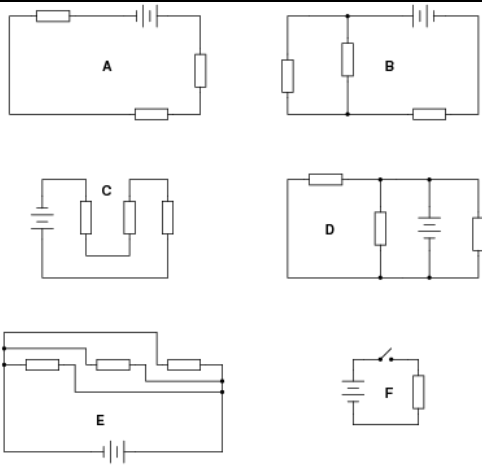


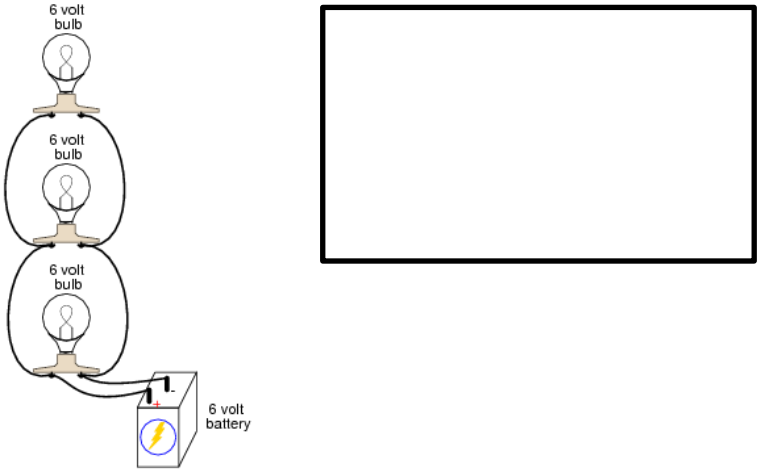
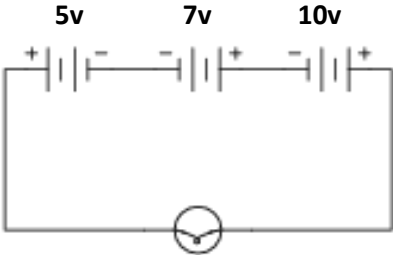
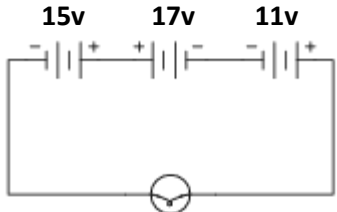
#39 CFA/PCA PHYSICS II MASTERY

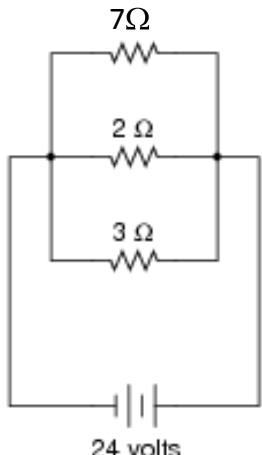
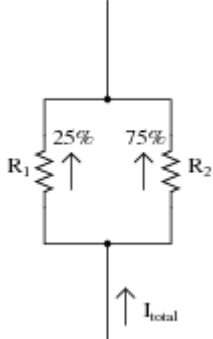
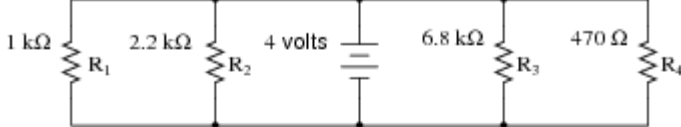
CHECK OFF SHEET 3

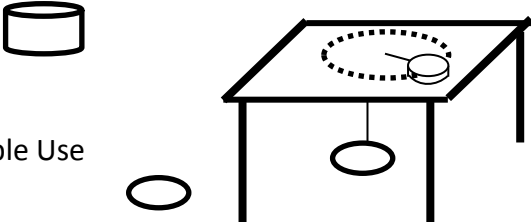
\* DENOTES MEMORY FLASH CARD TOPIC

	<b>Topic</b>	<b>Example</b>	<b>Mastery or Cert.</b>	<b>Initial</b>
1.	Electro statics	<p>Draw the electric field between 2 electrons</p> <p style="text-align: center;">-                      -</p> <p>Between 2 protons</p> <p style="text-align: center;">+                      +</p> <p>Between a proton and an electron</p> <p style="text-align: center;">-                      +</p>		
2.	Electric plates	<p>Draw the electric Field lines between 2 plates</p> <p style="text-align: center;">-    ————           ———— +</p> <p>What is the equation of the Electric field strength between the plates: _____</p> <p>If you shot an Proton towards the top of the page from the bottom through the plates, which way would the proton move? _____</p>		

3.	R Parallel and R Series, Circuits	What stays the same in Parallel : _____ and what stays the same in Series: _____ Electric field of a circuit always goes from _____ to _____.		
4.	Parallel Resistance	a. What is the easy formula for resistance in Parallel with 2 resistors: _____ b. What is the general formula:		
5.	Series & parallel Capacitance	a. What is a capacitor? _____ b. What is the easy formula for Capacitance in Parallel with 2 Capacitors: _____ c. What is the easy formula for Capacitance in Series with 2 Capacitors: _____		
6.	Ohms law	What is ohm's Law?		
7.	Elec. Eqn Circ. Volt, Power	Equation for Electric power: 		
8.	Series Circuits	 <p>Label direction of current Give Req= _____ Current through 10Ω resistor= _____ Current through the 20 Ω resistor= _____ Voltage drop over the 18 Ω resistor= _____ What is the power dissipated in the circuit by the resistors? _____</p>		
9.	Series or Parallel	 <p>Box the Series circuits above, Circle the Parallel.</p>		

<p>10. Schematics diagrams</p>		<p>Re-draw this circuit in the form of a schematic diagram:</p> 		
<p>11. Batteries in Series</p>		<p>How much voltage does the light bulb receive in this circuit? Explain your answer.</p>  <p>How much voltage does the light bulb receive in this circuit? Explain your answer.</p> 		
<p>12. Algebra</p>		<p>a. <math>2a + 3b - 4c = 5d^2</math>  b. Solve for <math>d^2</math></p> <p>c. Solve for <math>d</math></p> <p>d. Solve for <math>c</math></p>		

13.	Parallel Circuits	 <p style="text-align: center;">24 volts</p>	<p>In this circuit, three resistors receive the same amount of voltage (24 volts) from a single source. Calculate the amount of current "drawn" by each resistor, as well as the amount of power dissipated by each resistor</p>																																
14.			<p>Give values for R1 and R2 so that the percent of the current is as given.</p>																																
15.			<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th>R<sub>1</sub></th> <th>R<sub>2</sub></th> <th>R<sub>3</sub></th> <th>R<sub>4</sub></th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>V</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>I</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>R</td> <td>1 kΩ</td> <td>2.2 kΩ</td> <td>6.8 kΩ</td> <td>470 Ω</td> <td></td> </tr> <tr> <td>P</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Fill in the chart</p>		R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>	R <sub>4</sub>	Total	V						I						R	1 kΩ	2.2 kΩ	6.8 kΩ	470 Ω		P							
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16.	Ohmmeter vs Ammeters		<p>How is an ammeter attached to a circuit? _____</p> <p>How is a voltmeter attached to a circuit? _____</p> <p>WHY? _____</p>																																
17.	<b>Springs/ Pendulums</b>	<p><b>A.</b> a Spring with spring constant 50N/m, and a mass of 200 kg hanging on it is stretched 1m from equilibrium, What is the period?</p> <p><b>B.</b> A Pendulum with length 7m, and a bob of 100 kg is on the earth. What is the period?</p>		<p><u>C.</u> What mass is on a spring that is naturally stretched by the mass 0.3 m with spring constant of 0.9N/m?</p> <p>Draw what is going on here:</p>																															

18.	<b>Statics/ Torques</b>	<p>On a balanced see saw, 2 MS boys one weighs 150 lbs at 2m and the other is 1 m to the right of the fulcrum . They have a 200 lb HS friend who is 1.75 m from the left of the fulcrum. How much does the other MS boy weigh?</p> <p>Draw a picture of what is happening here:</p>
19.	Circular Motion	<p>A 4 kg puck is moving in a circle of radius 2 m at 4 m/s on a frictionless table holding up an unknown mass.</p> <p>a. Draw the FBD of the puck moving in a circle on the table Use picture here.</p> <p>b. Draw an FBD of the weight under the table Use picture here.</p> <p>c. <b>What is the tension in the string?</b> _____</p> <p>d. <b>What is the mass being held up?</b> _____</p> 
20.	Misc Review	<p>a. The Period of a mass on a spring oscillating is _____</p> <p>b. The unit for power is what? _____</p> <p>c. Find the acceleration of an Atwood machine with masses of 18 and 12kg on each end. _____</p> <p>d. Find the Tension for c. _____</p> <hr/> <p>Find the second mass of an Atwood machine if one 2kg mass is accelerating at <math>3 \text{ m/s}^2</math>: _____</p>

Name/ Grade: \_\_\_\_\_ / Date: \_\_\_\_\_

HMWRK #40

WRITE IT DO IT PRACTICE...

1. What did these people invent, and/ or what famous law are they known for, why are they important:

a. Garrett Morgan \_\_\_\_\_

Bonus- Can you find one of his inventions at the school- Where: \_\_\_\_\_

b. Bill Gates \_\_\_\_\_

c. Steve Jobs \_\_\_\_\_

d. Louis Latimer \_\_\_\_\_

2. Who invented the Computer? \_\_\_\_\_ Describe to a 2<sup>nd</sup> grader how the Computer works: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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