



Weekly Sheet for MS2/ HS1b PHYSICS
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Week #10, Week of Tues(10/31) to Mon (11/7)

Topics/Content/Skills: Dynamics, Periods, and exclamation points

Skills:

- More Practice with Periods... The period of a spring, Pendulum
- More Practice with Projectile motion.
- More review with Free body diagrams (Dynamics and Statics)

Vocabulary/Key Terms/Formulas:

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

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

	<u>In Class</u>	<u>Homework Due in this Class</u>
<u>Monday</u> <u>10/31</u>	Prezi Research (MS2)	Hmwrk sheet #26 EXTRA HELP SESSION>>>>>> MS1 & HS1a at Lunch esp. But also MS2 & HS1b
<u>Tuesday</u>	<u>Inquiry based Lab- Pendulums Springs (if time)</u>	Hmwrk Sheet #27
<u>Wednesday</u> <u>Not HS1</u>		Hmwrk sheet #28
<u>Thursday</u> <u>HS1 Double</u>	<u>Test #2 HS1b 1st period</u> <u>Prezi Research (HS1b 2nd period)</u>	Hmwrk sheet #29 (and #28 (HS1))
<u>Friday</u>	<u>No Class on Fridays</u>	<u>NA</u>
<u>Monday</u> <u>11/7</u>	<u>Prezi (for real this time)</u> <u>Practice</u>	#30 (& #27 for HS1b)

Tests/Due Dates: **There will be a 45 min TEST (#) on Thursday Nov. 3.** Last week's test was Postponed to this week because of the trip to HMS.

Test Topics: 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 Towers are coming... Nov. 22 See sheets for Details.

There will be an Extra help session on Mondays at Lunch time. Those who need help or just want to get ahead are encouraged to come!

Name/ Grade: _____ / Date: _____

Homework Sheet #27 All Saints Day Eve- Find a Christian Scientist or Engineer or inventor or anyone who has shaped today's world and create a Prezi about them.

Expectation...

1. Get 3 photos (and if there is a you tube video of them find one) of your person and something they have done.
2. Write a "slide" or 2 (paragraph or 2)paragraph summarizing their background.
3. Write a "slide" or 2 (Paragraph or 2) Why do you think their Christian faith influenced them.
4. Use pictures and make a prezis with rotation, zooming , and a set path.
5. Email me the link of your Prezi (as well as to your parents as well.

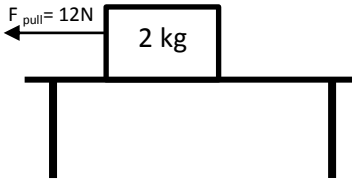

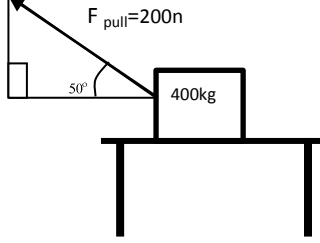

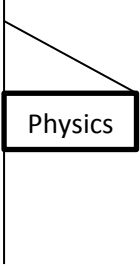
How to get a Prezi Account... (if you don't already know) and upgrade your account if you like...

1. Go to Prezi.com
2. Click on the sign up button. If you already have an account you can upgrade it as well.
(to Upgrade go to your sign in name, click the arrow and go to settings- click upgrade)
3. Scroll down and go to student/Teacher licenses.
4. Click on Edu Enjoy button for 500 Mb of content space and ability to keep your content private.
5. Use your parkside email to make an account.
6. Answer the questions they ask of you. School website: parksideca.org. Make sure you remember your user account info.
7. Once you have submitted your answers, they will send an email to your school account to confirm your account.

Khan Academy Practice

- A. Do 20 Derivatives 1 problems and make sure I am your coach... My email is mdixon@parksideca.org.
- B. You can do 20 more problems of your choice, but make sure they benefit you.

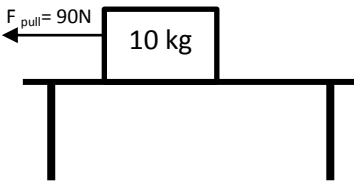

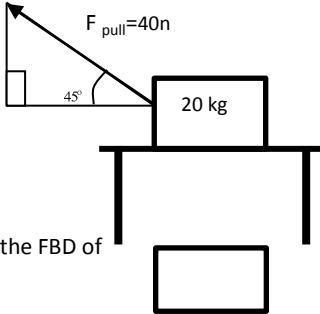

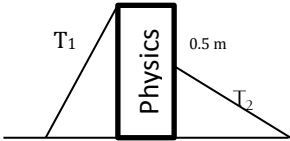
HMWRK #28
THE WEEK'S 15

<p>Dynamics</p>	<p>1. </p> <p>a. Draw the FBD of the box </p> <p>b. If the coefficient of static friction is 0.1, What is the maximum friction the box can have? _____ What is the net force? _____</p> <p>c. If it does move what is the acceleration (assume $\mu_s = \mu_k = 0.1$) _____</p>	<p>2. </p> <p>a. Draw the FBD of the box </p> <p>b. What is the Normal force of the box? _____</p> <p>c. If the coefficient of static friction is 0.2, What is the maximum friction the box can have? _____</p> <p>d. What is the acceleration (assume $\mu_s = \mu_k = 0.2$) _____</p>	<p>3. Make your own Dynamics problem... AND solve</p>
<p>Projectiles</p>	<p>4. A ball is dropped from a cliff of 120 m, how long does it take to hit the ground?</p>	<p>5. A ball is thrown horizontally from a 120m cliff at 50m/s, how far from the base of the cliff does it land?</p>	<p>6. A ball is thrown at a 30° angle with respect to the horizontal, from a 120m cliff at 50m/s, how far from the base of the cliff does it land?</p>
<p>Statics/ Torques</p>	<p>7. On a balanced see saw, 2 MS boys one weighs 150 lbs at 1m and the other is 2 m to the right of the fulcrum . They have a 200 lb HS friend who is 2m from the left of the fulcrum. How much does the other MS boy weigh?</p>	<p>8.  A 40 kg physics sign, 1 m long is being held up by a wall and a wire that makes a 40° angle with the horizontal. The Tension in the wire is 300 N. What force upward does the wall give to the sign?</p>	<p>9. Make your own Statics problem... AND solve</p>
<p>Springs/ Pendulums</p>	<p>10. A. a Spring with spring constant 4N/m, and a mass of 3 kg hanging on it is stretched 1m from equilibrium, What is the period?</p> <p>B. A Pendulum with length 1m, and a bob of 20 kg is on the earth. What is the period?</p>	<p>11. What mass is on a spring that is naturally stretched by the mass 0.2 m with spring constant of 4N/m?</p>	<p>12. Make your own Statics problem... AND solve</p>
<p>Misc. incl. Lit Problems</p>	<p>8. $Ax + By = Cx$ Solve for C Solve for B</p>	<p>13. $M_1g + M_1h = Kx^2$ Solve for M_1 Solve for x</p>	<p>14. Make your own literal problem and solve</p>

Name/ Grade: _____ / Date: _____

HMWRK #29

MORE 15

<p>Dynamics</p>	<p>1.</p>  <p>a. Draw the FBD of the box </p> <p>b. If the coefficient of static friction is 0.1, What is the maximum friction the box can have? _____ What is the net force? _____</p> <p>c. If it does move what is the acceleration (assume $\mu_s = \mu_k = 0.1$) _____</p>	<p>2.</p>  <p>a. Draw the FBD of the box </p> <p>b. What is the Normal force of the box? _____</p> <p>c. If the coefficient of static friction is 0.2, What is the maximum friction the box can have? _____</p> <p>d. What is the acceleration (assume $\mu_s = \mu_k = 0.2$) _____</p>	<p>3. Make your own Dynamics problem... AND solve</p>
<p>Projectiles</p>	<p>4. A ball is dropped out of a stationary satellite on Mars ($g=4\text{m/s}^2$) at 20,000 m, how long does it take to hit the ground? <i>Neglect air resistance</i></p>	<p>5. A ball is thrown horizontally from the satellite in prob 4, at 20m/s, how far from the point directly below the balloon, does it land? <i>Neglect air resistance</i></p>	<p>6. A ball is thrown from the balloon in prob 4, at a 30° angle <i>below</i> the horizontal, how far from the point directly below the balloon, does it land?? Check with PHET sim.</p>
<p>Statics/ Torques</p>	<p>2. On a balanced see saw, 2 MS boys one weighs 175 lbs at 1.25m and the other is 1.8 m to the right of the fulcrum . They have a 200 lb HS friend who is 2m from the left of the fulcrum. How much does the other MS boy weigh?</p>	<p>7.</p>  <p>A 20 kg physics sign, 1 m long is being held up by 2 wires. T₁ makes a 60° angle with respect to the horizontal and T₂ makes a 30° angle with the horizontal. If T₁ = 200N, what does T₂ =</p>	<p>8. Make your own Statics problem... AND solve</p>
<p>Springs/ Pendulums</p>	<p>9. A. a Spring with a period of 6s, and a mass of 5 kg hanging on it is stretched 1m from equilibrium. What is the K?</p> <p>B. A Pendulum with period of 4s, and a bob of 20 kg is on the earth. What is the length?</p>	<p>10. A spring with $k= 30\text{N/m}$ has a force of 200N on it. How far is it stretched?</p>	<p>11. Make your own Statics problem... AND solve</p>
<p>Misc. incl. Lit Problems</p>	<p>12. $\mu N \cos\theta = Mg \sin\theta$ Solve for μ Solve for M</p>	<p>13. $\mu Mg \tan\theta \cos\theta = Mg$ Solve for θ</p>	<p>14. Make your own literal problem and solve</p>

Name/ Grade: _____ / Date: _____

HMWRK #30

WRITE IT DO IT PRACTICE...

1. During our Spirit week we talked about heros/ Scientists, etc. ...

a. _____

b. _____

c. _____

2. What did these people invent, and why are they important:

a. Patricia Bath _____

b. Angel Alcala _____

c. Joseph Woodland and Bernard Silver _____

d. George Smith and Willard Boyle _____

e. Dr. John Pemberton _____

3. Describe to a 2nd grader how relative velocities work (hint you can use a train):
