Science 10

Tuesday, May 29/18

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Roller Coaster: Due: Friday, June 1/18
Optional Assignment - Graphing Characters (Max. 2)
- Due: Friday, June 1/18

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1. SA - Physics #2 - Still to be written by some.
2. Return -> FA - Position and Displacement
3. Worksheet: Constant and Average Velocity Problems
4. Position vs Time Graphs (1)
5. Worksheets - Position vs Time Graphs

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6. Velocity-Time Graphs (2)
7. Worksheet - Velocity vs Time Graphs
8. Acceleration (3)
9. Comparing Directions of Velocities and Accelerations
10. Sample Problems - Acceleration
11. Worksheet - Acceleration

Physics 112

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1. Exam Review - Problem #2 -> See Next Page

2. Return -> FA - E_k and Work- E_K Theorem

3. Check:
   Worksheet: C6 PP #27 and 29 -> Grav. Pot. Energy
   C6 PP #30-33 -> W- E_g Theorem

4. Restoring Force

5. Hooke's Law

6. Elastic Limit

7. Model Problem

8. Elastic Potential Energy

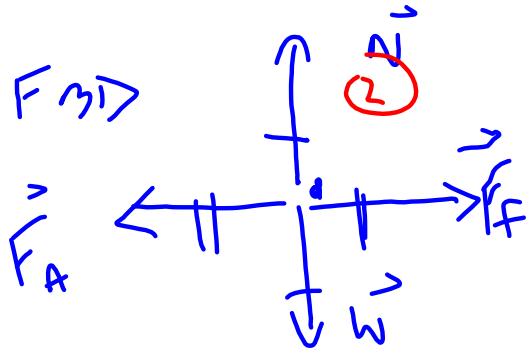
9. Model Problem

10. Worksheets:
    Textbook - C6 PP #35-37 -> Hooke's Law
    Textbook - C6 PP #38-40 - Hooke's Law and E_e
    Textbook - C6 PFU

Exam Review -1st Law Problem #2 May 29

A box of mass 15.32 kg is being pulled to the left across a horizontal surface by an applied force of 58 N. The box is moving at constant speed. What is the coefficient of kinetic friction? Include an FBD for the box.

1st Law → forces
→ rest / const. vel
→ FBD.



$F_A = 58N$

$W = N$ ✓ | $W = mg$

$F_A = F_f$ ✓ | $F_f = \mu N$ ↑

$F_f = \mu N$ (1)

$F_A = \mu N$ (1)

$F_A = \mu W$ (1)

$F_A = \mu mg$ (1)

$\mu = \frac{F_A}{mg}$ (1)

coefficient

$\mu = \frac{58}{(15.32)(9.8)}$ (1)

$\mu = 0.39$

WS

Physics 122

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1. SA: U2 - Projectiles and Circular Motion
2. Kepler's Three Laws of Planetary Motion - Experiment 8.1
   Due: Tuesday → May 29 (at the latest)
3. Worksheet - Kepler's Third Law Problems

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4. Universal Law of Gravitation
5. Worksheet - Universal Law of Gravitation
6. Gravitational Field Strength
7. Calculating the Value of "g"
8. Orbital Speed
9. Three Basic Orbits
10. The Period of an Orbiting Object
11. Worksheets - Speed, Period, Etc.

Physics 122/121 - Topics - Final Exam

Unit 1

-> force problems
- push/pull
- suspended objects
- incline plane

-> static torque
- horizontal
- involving an angle

-> relative velocity (boat, plane and intersection problems)

-> collisions
- 1 D
  - simple
  - elastic/inelastic
- 2D
  - collision/explosion

Unit 2

-> projectiles
- horizontal
- fired at an angle

-> circular motion
- horizontal circular motion
- banked and unbanked curves

-> Kepler's Laws (3)

-> Law of Universal Gravitation

-> g, v and T of satellites, moons, planets, etc.

-> SHM
- pendulum
- mass on a spring

Unit 3

-> electrostatics
- types of electrical charges (2)
- transfer of charge between identical objects/conservation of energy
- charging objects
  - by electrification by friction
  - by conduction
  - by induction
- electric force - Coulomb's Law
  - 2 charges
  - 3 charges
- electric fields
  - diagrams
  - electric field strength
- electric potential energy
- electric potential difference

-> electric current
- conventional current/electron flow
- circuit symbols
- open/closed circuits
- ammeters/voltmeters
- resistance in a wire?
- Ohm's Law
- power
- circuits
  - VIR chart
  - series
  - parallel
  - complex

June 2018

Format - multiple choice = 20
problems = 10

1. push/pull OR inclined plane problem
2. circular motion OR relative velocity
3. static torque problem
4. 2D collision/explosion
5. projectile fired at an angle
6. Law of Universal Gravitation and g, v and T of satellite or planet, etc.
7. SHM - mass on a spring
8. Coulomb's Law - 3 charges
9. electric field - diagram, magnitude and direction
10. circuit - complete VIR chart

Science 122

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1. Check:
   Worksheet: #64

2. Oxidation Numbers/States

3. Rules for Assigning Oxidation Numbers

4. Worksheet - Assigning Oxidation Numbers

5. Balancing Redox Reactions Using Oxidation Numbers

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6. Examples - Balancing Redox Using Oxidation #'s

7. Chemistry 30:
   Unit 6: Redox Reactions and Electrochemistry