Physics 112

Friday, December 14/18

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1. Questions
   Worksheet - C6 PP #27 and 29 -> Gravitational Pot. Energy
                   C6 PP #30-33 -> W- E_g Theorem

2. FA - Gravitational Potential Energy   }   Completed and
   FA - Change in Gravitational Pot. Energy   }   checked in class.

3. Restoring Force, Hooke's Law and Elastic Limit

4. Worksheet - C6 PP #35-37 -> Hooke's Law
                 C6 PP #38-40 - Hooke's Law and E_e
                 C6 PFU #16-17, 20 , 23-25, 27-28, 30-31

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5. FA - Elastic Potential Energy
   FA - Elastic Potential Energy

6. SA - U3S2 - Types of Energy and Work-Energy Theorems
           - _____Wednesday, Dec. 19/18_____

Physics 122
Friday, December 14/18

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1. Questions?
   Worksheet - Projectiles Fired at an Angle
          - C11, Text 543, PP #9-12
   Worksheet - Projectiles Fired at an Angle
          - C11, Text 549, PP #13, PP #14 (Level 1)
          - C11, Text 570, PFU #17, 19, 20 (omit graph)
   Worksheets - Mixed Horizontal and Fired at an Angle Projectiles (2)

2. FA - Projectile Fired at an Angle - Deadline: <u>Thurs., Dec. 13/18</u>

3. FA - Mixed SHM and Projectile Motion (Optional)

4. SA - U2 S3&4 - SHM and Projectile Motion
          - 5 Problems (10 min/Prob)
          - Monday, Dec. 17/18

5. Electrostatic Force

6. Coulomb's Law

7. Worksheet - Charge and Coulomb's Law (Two Objects)

Physics 122
Formative Assessment – U2 S3&4 – SHM and Projectile Motion

Formative Assessment – SHM: Pendulum
Galileo observed a lightbulb swinging from a length of wire attached to the ceiling of his lab. If he counted eleven complete swings in 12.5 s, what was the length of this "pendulum" in centimeters? (6)
The length of the pendulum is 32.1 cm.

Formative Assessment – SHM: Mass on a Spring
A spring system consists of a spring and a 152 g mass attached to one end that slides along a horizontal, frictionless surface. When a horizontal force of 8.0 N is applied to the mass, it stretches the spring 10.0 cm.
a) What is the displacement of the mass from the rest position when the speed of the mass is 1.98 m/s? (11)
The displacement of the mass is 0.050 m.

b) What is the total energy of the mass-spring system? (3)
The total energy of the system is 0.40 J.

Formative Assessment - Horizontal Projectile
A canon ball fired horizontally from a cliff has a velocity directed at 60° below horizontal when it hits the ground 3.0 seconds later. How far from the base of the cliff does the canon ball land? (9)
The canon ball lands 51 m from the base of the cliff.

Formative Assessment – Projectile Fired at an Angle
1. From level ground, a football is kicked up at a certain angle. The ball reaches its maximum height in 1.2 s. It strikes the ground 30.0 m from where it was thrown. What was the ball's initial velocity? (9)
The ball's initial velocity was 17 m/s, 43° above the horizontal.

2. A baseball is hit foul into the stands at the former Pac Bell Park. The ball is hit when it is 1.00 m above the playing field and leaves the bat at 40.0 m/s at 54.0° with the horizontal. The ball lands in seats 11.0 m above the playing field.
a) What is the maximum height reached by the ball above the playing field? (6)
The maximum height was 54.4 m.

b) How long was the ball in the air? (6)
The ball was in the air for 6.28 s.

Science 10
Friday, December 14/18

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1. Science Articles - Complete 8 by the end of the semester.
   Optional Assignment - Graphing Characters (Max. 2)
                          - Due: Dec. 21/18

2. Worksheets - Average Speed Problems (3)

3. SA - Physics #2
      - Topics (See Next Page)
      - Date: ___Tuesday, Dec. 18/18___

4. Review: SA Physics #2

5. Roller Coasters and/or Intervention

Science 10
Topics - SA: Physics #2

1. Plot and label points in the four quadrants.

2. Write the coordinates of a plotted point.

3. Determine the slope of a line using:

$$m = \frac{rise}{run} \quad \text{OR} \quad m = \frac{y_2 - y_1}{x_2 - x_1}$$

4. Draw and label a distance vs. time graph.

5. Be able to determine the speed of an object from a distance vs. time graph.

6. Answer questions about distance vs. time graphs.

7. Match a graph to a story/interpret a graph.

8. Solve average speed problems.