Physics 112

Monday, January 15/18

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1. Questions?
   Worksheet - Refraction: Problems #1-13

2. Critical Angle

3. Total Internal Reflection

4. Worksheet - Refraction: Problems #13-20

5. SA - U4:S1&2 -> Wednesday, January 17/18
   -> Fill in Blanks
   Refraction Diagram
   Problems

6. Exam Review - Problem #6

P112 - Exam Review - Problem #6

*time

ms → s

1ms = 10^{-3} s

impulse - momentum theorem

6.66 s

A 2250 kg car is traveling to the west with a speed of 20.0 m/s. How long does it take a car to obtain a momentum of 1.125 x 10^4 kgm/s, east if an eastward force of 8450 N acts on the car?

m = 2250 kg

$\vec{v}_i$ = -20.0 m/s

$\vec{p}_f$ = +1.125 x 10^4 kgm/s

$\vec{F}$ = +8450 N

$\Delta = f - i$

$\vec{J} = \vec{F}t = \Delta\vec{p}$

$\vec{F}t = \Delta\vec{p}$

$\vec{F}t = \vec{p}_f - \vec{p}_i$

$\vec{F}t = \vec{p}_f - m\vec{v}_i$

$t = \frac{\vec{p}_f - m\vec{v}_i}{F}$

t = 6.66 s.

WS

Physics 122

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Mrs. Stewart's Roller Coasters

1. Exam Review - Problem #3 and Problem #4

2. Worksheet - Textbook: C15, Page 708, #16-20
   Worksheet - Textbook: C15, Page 714, #21-25
   Worksheet - Textbook: Page 737, #40-42
   Page 744, #46-50
   Series -> Textbook: Page 719, C15 - PP#27-31
   Parallel -> Textbook: Page 724, C15 - PP#32-35
   Complex -> Textbook: Page 728, C15 PP#36-37

3. SA - U3 - S2 - Electric Circuits -> Tuesday, January 16/18
   - MC: 10 max
   - Problems: electric current ($I = q/t$)
   resistance in a wire ($R = \rho \frac{L}{A}$)
   power ($P = IV$)
   complex circuit - complete VIR chart

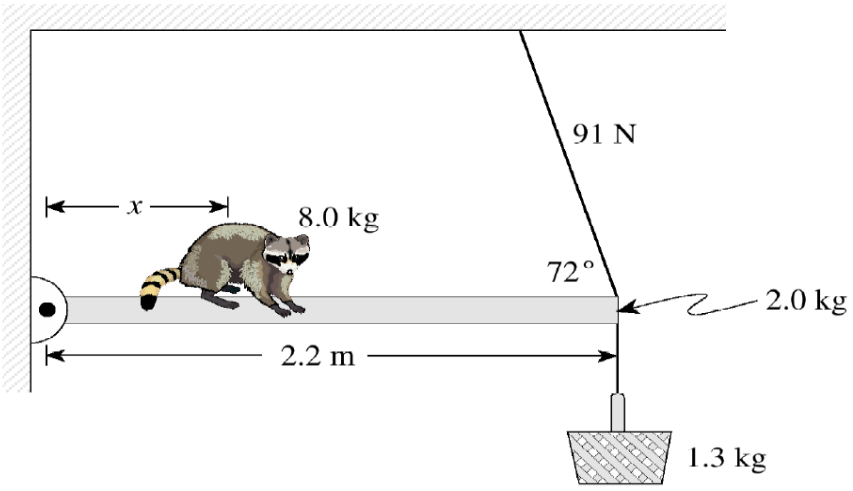
P122 - Exam Review - Problem #3

A concrete block accelerates down a 34^{o} slope at 4.2 m/s^2. Find the coefficient of friction between the block and slope.

0.16

P122 - Exam Review - Problem #4

A hungry 8.0 kg raccoon walks out on a 2.0 kg, 2.2 m long uniform beam in an attempt to reach a 1.3 kg food basket hanging at the end. A cord that can withstand 91 N is used to support the beam at the end as shown.



What is the maximum distance, x, the raccoon can walk out onto the beam before the cord breaks?

1.8 m

Science 10

Monday, January 15/18

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1. Worksheet: Position vs. Time Graphs
   Worksheet: Velocity vs Time Graphs
   Worksheet - Acceleration Problems

2. SA - Physics #3 -> Wednesday, January 17/18
   -> Review

3. Roller Coasters - Due: Thursday, Jan. 18/18

4. Practice Exam * Velocity-Time Graph

Topics - SA: Physics #3

1. definitions: scalar quantity, distance, speed, vector quantity, reference point, position, displacement, constant velocity, resultant displacement, average velocity, acceleration

2. directions: positive (east, north, up , right)
   negative (west, south, down, left)

3. physical quantities: type, symbol and unit

4. determine the slope of a line using:

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

5. identify types of motion:
   1. uniform (constant velocity)
   2. uniformly accelerated motion (changing velocity)

6. answer questions about position vs. time graphs

7. draw a velocity vs. time graph given a position-time graph

8. answer questions about velocity vs. time graphs

9. describe the motion of an object by comparing the directions of the object's velocity and acceleration

10. solve word problems:
    (i) displacement
    (ii) constant velocity
    (iii) average velocity
    (iv) acceleration