

Physics 112

Thursday, February 21/19

<http://mvhs.nbed.nb.ca/>



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1. SA - Basic Knowledge and Skills
 - Topics
 - Date: Today

2. Review: Primary Trig Ratios
 - Emoticon Mosaics

3. Review: Law of Pythagoras
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4. Rubric - Adding Vectors Analytically

5. Worksheet - U1 S1: Vector Analysis

Physics 122

Thursday, February 21/19

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1. FA - Force Problem - Type I - Pull
FA - Force Problem - Type I - Push
FA - Force Problem - Type II - Simple
FA - Force Problem - Type II - Complex
FA - Force Problem - Type III - Inclined Plane
FA - Force Problems - Type I, II and III
 2. Net Torque
 3. Static Torque Problems
 4. Worksheet - Static Torque - #1
-

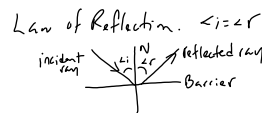
Science 122

Thursday, February 21/19

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1. Worksheet - Practice Problems on Lenses in Combination
Worksheet - Extra Problems - Double Lenses
 2. Review Problems (Mirrors and Lenses)
 3. SA -> Optics
-> Date: Friday. Feb. 22/19
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Refraction: $v_s = \frac{c}{n_s}$ ($c = 3.00 \times 10^8 \text{ m/s}$)

3 cases: ① $n_i < n_r$, $\angle i = 0^\circ$
 air water
 1.00 1.33
 no refraction

② $n_i < n_r$, $\angle i \neq 0^\circ$
 $\rightarrow$ bend toward the normal
 $\angle i > \angle r$

③ $n_i > n_r$, $\angle i \neq 0^\circ$
 water air
 $\angle i < \angle r$
 $\rightarrow$ light bends away from the normal
 $n v_s = \frac{c}{n_s} \downarrow$

Snell's Law.

$$n_i \sin i = n_r \sin r$$

Mirrors

1. Plane Mirror (flat)
 $\rightarrow$ complete a labelled diagram
 $\rightarrow$ Post 1 set of characteristics

2. Spherical Mirrors (curved)

(i) Concave (converging)

$\rightarrow$ 5 ray diagrams
 $\rightarrow$ 5 sets of Post
 $R = 2f$
 $\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i}$
 $m = \frac{d_i}{d_o} = \frac{h_i}{h_o}$
 $\rightarrow$ Mirror Equation Sign *
 $\rightarrow$ Magnification Eq (converging)

(ii) Convex (diverging)
 $\rightarrow$ 1 case $\rightarrow$ draw ray diagram
 1 set of Post
 $\rightarrow$ Solve Problems

Lenses

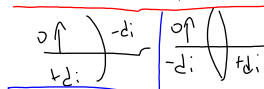
* material of the lens (index of refraction) affect $\oplus$
 * shape

(i) Convex lenses (converging)
 $\rightarrow$ 5 cases / diagrams

$\rightarrow$ problems

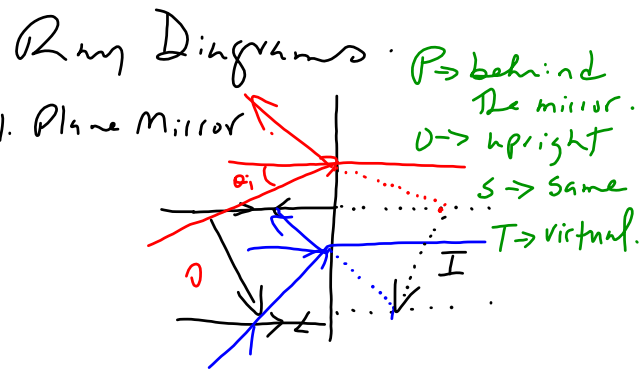
lens eq. $\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i}$
 magn. eq. $m = \frac{d_i}{d_o} = \frac{h_i}{h_o}$

* convex lens $f \oplus$



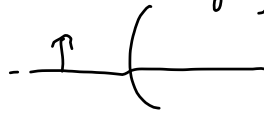
(ii) Concave lens (diverging)

$\rightarrow$ 1 case / Diagram
 1 set of Post
 $\rightarrow$ word Prob.



2. Spherical Mirrors.

1. Convex (diverging)

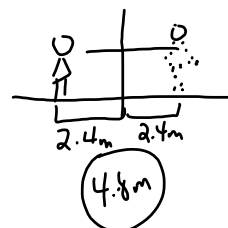
2. Concave (converging)
5 cases.

3. Lenses

1. Concave (div).

2. Convex (conv).
5 cases.

5 Ray Diagrams

MC $\rightarrow$ 5Prob $\rightarrow$ 4/5

① Snell's Law

$$v = \frac{c}{n}, \quad n_1 \sin i = n_2 \sin r.$$

② Concave mirror

③ Convex mirror

④ Concave lens

⑤ Convex lens

$$R = 2f$$

$$\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i}$$

$$m = \frac{d_i}{d_o} = \frac{h_i}{h_o}$$

Science 10

Thursday, February 21/19

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1. SA - Chem #1
 - Topics
 - Date: **Friday, February 22/19**
 2. Assignment: Periodic Table of Me, Myself and I
Date: **Friday, Feb. 22/19**
 3. Periodic Table of Ions - Pink
 4. Worksheet: Bohr-Rutherford Diagrams Atoms to Ions
 5. Worksheet - Chemistry: Ions and Subatomic Particles
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6. Naming Monatomic Ions
 7. Worksheet #1 - Monatomic Ions
 8. Ionic Compounds
 9. Simple Binary Ionic Compounds

Topics: SA - Chem #1

1. chemistry
2. matter
3. types of properties: physical and chemical
4. types of changes: physical and chemical
5. atoms -> building blocks of matter
 - > three subatomic particles: p^+ , n , e^-
 - > locations of three subatomic particles
 - > electrically neutral: $\#p^+ = \#e^-$
6. element
7. chemical symbols
8. periodic table of the elements - periods (rows)
 - groups/families (columns)
 - family and period names
 - location of metals, nonmetals and metalloids
9. atomic number = number of protons
10. standard atomic notation
11. Bohr-Rutherford Diagrams

Proton
neutron
electron