Physics 112

Friday, February 15/19

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1. FA - Metric Conversions and Rearranging Equations

2. SA - Basic Knowledge and Skills
   - Topics
   - Date: Thursday, Feb. 21/19

3. Unit 1 - Section 1: Vector Analysis - Concept Sheet

4. Mechanics

5. Types of Physical Quantities

6. Vectors: Direction, Notation and Representation - To Be Continued

7. Physical Quantities to Know

8. Adding Vectors Graphically

Topics - SA: Basics Knowledge/Skills

1. physics - definition
2. metrology - definition
3. physical quantity - definition
4. measurements - two parts
5. scientific notation $125\,kg \Rightarrow 1.25 \times 10^{2}\,kg$
6. accuracy/precision - definitions, interpret scenario
7. percent error calculation * formula
8. significant digits - in a given measurement
   - Precision (+ and -) & Certainty (x and ÷) Rules

   dd s>
9. SI system - quantities and 7 base units (names/symbols) Chart
   - derived units
10. SI prefixes - names, symbols and powers of ten
11. metric conversions - 1 step
    - 2 steps
    - m/s ⟷ km/h
12. rearranging equations

Physics 122

Friday, February 15/19

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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

2. Worksheet: Type III (Inclined Planes)

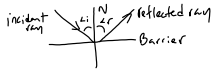
3. Worksheet: Review Force Problems (I, II and III)

Science 122
Friday, February 15/19
http://mvhs.nbed.nb.ca/

1. FA - Ray Diagrams: Convex and Concave Lenses
2. Lenses in Combination
3. Worksheet - Practice Problems on Lenses in Combination
   Worksheet - Extra Problems - Double Lenses
4. Review Problems (Mirrors and Lenses)

SA → Optics Thurs 2 Fri 3-1.

Law of Reflection. $\angle i = \angle r$



Refraction: $V_s = \frac{c}{n_s}$ $c = 3.00 \times 10^8$ m/s

3 Cases: ① $n_i < n_R$, $\angle i = 0°$
air, water, glass
1.00, 1.33, 1.66
no refraction

② $n_i < n_R$, $\angle i \neq 0°$
→ bend toward the normal
$\angle i > \angle R$

③ $n_i > n_R$, $\angle i \neq 0°$
water, air
$\angle i > \angle R$
→ light bends away from the normal

$V_s = \frac{c}{n_s}$ ↑ ↓

Snell's Law.

$n_i \sin i = n_R \sin R$

Mirrors

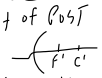
1. Plane Mirror (flat)
   → Complete a labelled diagram
   → Post] 1 set of characteristics
2. Spherical Mirrors (curved)

(i) Concave (Converging).
→ 5 ray diagrams.
→ 5 sets of Post

$R = 2f$
$\frac{1}{f} = \frac{1}{d_i} + \frac{1}{d_o}$
→ Mirror Equation
Magnification Eq] Sign Convention

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

(ii) Convex (diverging)
→ 1 case → draw ray diag
1 set of Post



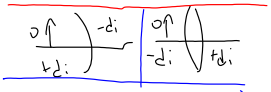
→ Solve Problems

Lenses.

* material of the lens (index of refraction)] affect (+)
* shape

(i) Convex lenses (converging)
→ 5 cases / diagrams
→ Problems.
lens eq. $\frac{1}{f} = \frac{1}{d_i} + \frac{1}{d_o}$
magn. eq. $m = \frac{-d_i}{d_o} \quad \frac{h_i}{h_o}$

* Convex lens f ⊕



(ii) Concave lens (diverging)
→ 1 Case / Diagram
1 set of Post
→ Word Prob.

Science 10

Friday, February 15/19

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1. SA - Chem #1
   - Topics
   - Date: Friday, February 22/19

2. Assignment: Periodic Table of Me, Myself and I
   Date: Wednesday, Feb. 20/19

3. FA - Standard Atomic Notation and Bohr-Rutherford Diagrams

4. Review: SA - Chem #1

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5. Ions

6. Periodic Table of Ions

7. Worksheet: Bohr-Rutherford Diagrams Atoms to Ions

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
   - ~~characteristics of metals and nonmetals~~
9. atomic number = number of protons
10. standard atomic notation
11. Bohr-Rutherford Diagrams

proton
neutron
electron