Physics 112

Tuesday, October 17/17

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

http://mvhs-sherrard.weebly.com/

1. FA - Kinematic Problem #2

2. Check -> ABC Brainstorming

3. SA: U1- S3 -> Topics (see Next Page)
   -> Format: Word Problems
   -> Friday, October 20/17

---

4. Unit 2 - Dynamics

5. Concept Sheet: U2 - S1 -> Types of Forces and FBDs

6. Introduction to Forces

7. Applied Force

8. Force of Gravity

9. Normal Force

10. Tension

11. Force of Friction

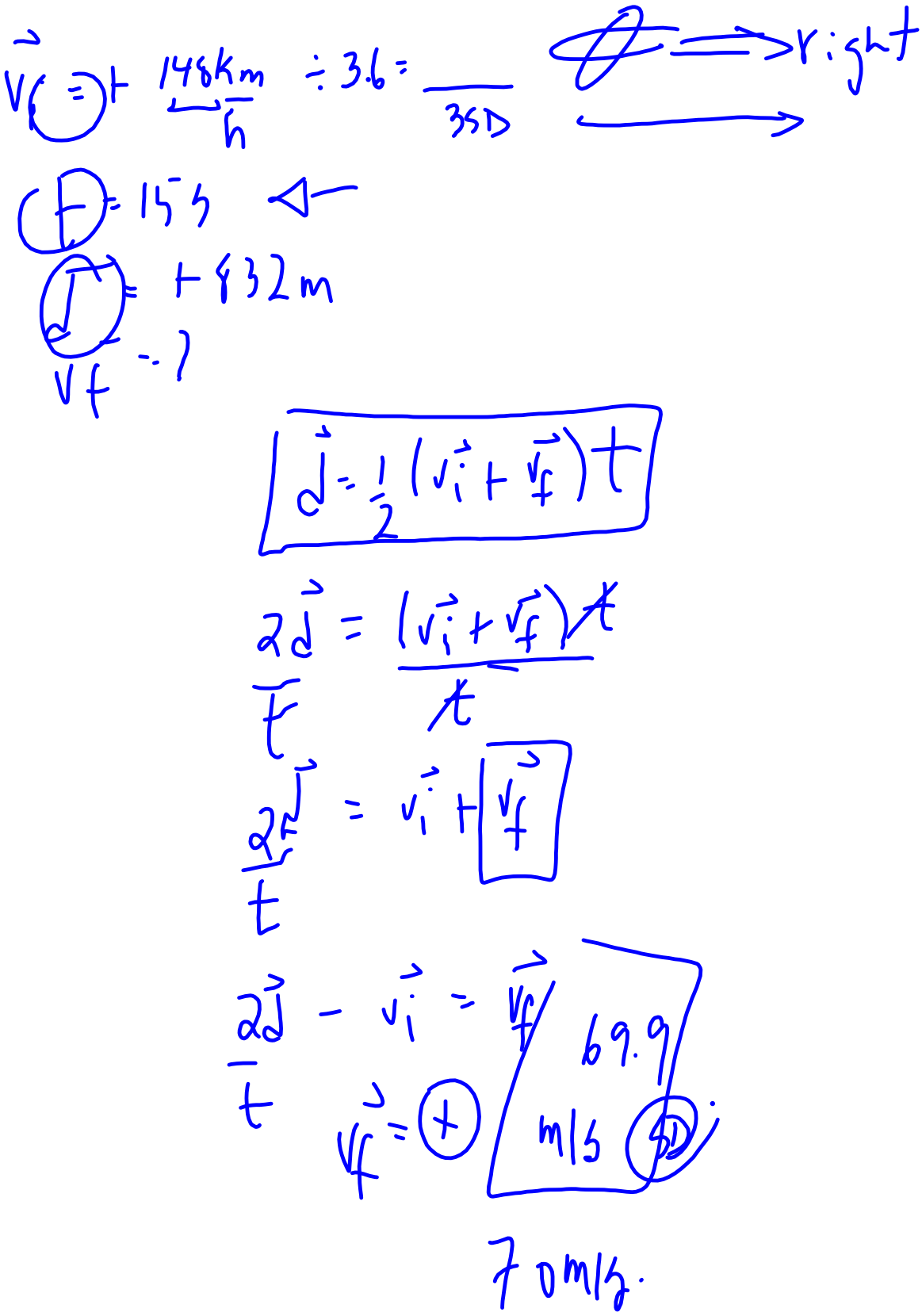
12. Free Body Diagrams

SA: U1- S3 -> Topics

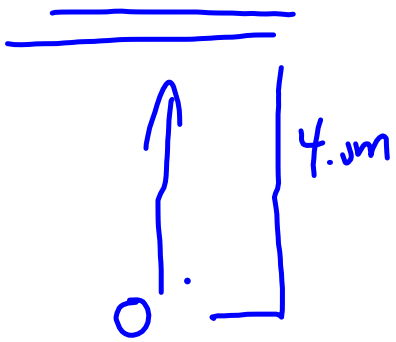
1. types of motion - uniform motion and uniformly accelerated motion
2. use the relationship between the directions of velocity and acceleration to determine the motion of an object
3. word problems - solve using checklist to obtain full value
   - uniform motion - 1 formula
   - uniformly accelerated motion - 4 formulas
   - quadratic formula
4. acceleration due to gravity - symbol -> $\vec{g}$
   - on Earth $\vec{g} = -9.80\ m/s^2$
   - assuming no air resistance when working with freely falling bodies

FA - Kinematic Problem #2 (17/17)

1. A plane travels at 148 km/h for a period of time then accelerates for 15 s over a distance of 832 m. What was the plane's velocity after 15 s?



2. Jenny propels a stone straight up with her slingshot. The stone strikes a tree branch 4.0 m above her. It strikes the branch with a speed of 5.0 m/s. How long does this take?



$\vec{v}_i = +\#$ m/s

$\vec{v}_f = +5.0$ m/s.

$\vec{a} = -9.8$ m/s^2

$t = ?$

$\vec{d} = +4.0$ m.

$\vec{v}_f^{\,2} = \vec{v}_i^{\,2} + 2\vec{a}\vec{d}$

$\vec{v}_i = +$ m/s.

$\vec{v}_f = \vec{v}_i + \vec{a}t$

$t = ?$ s.

Name: P112 Date: Oct. 16/17 Class/Period: ____

ABC BRAINSTORMING

Topic: Kinematics

A acceleration	G gravity	M magnitude	S stop
B base units	H height	N neutral	T time
C constant	I initial	O objective	U
D displacement	J jump	P positive, position	V velocity
E equation	K Kinematics	Q quadratic (formula)	W width
F final velocity	L length	R resultant, rest	XYZ

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

x-axis / y-axis / z-axis

Physics 122

Tuesday, October 17/17

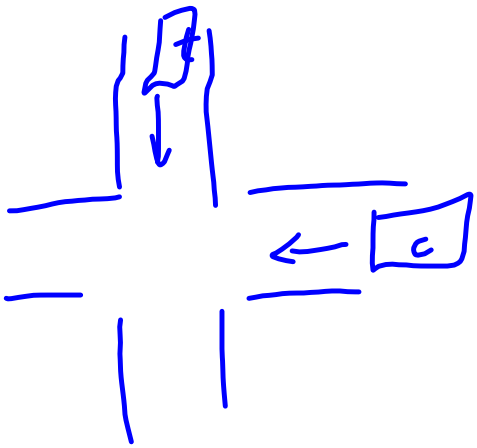
http://mvhs.nbed.nb.ca/

http://mvhs-sherrard.weebly.com/

1. Return -> FA - Intersection Problem
2. Check -> Worksheet: Collisions - Elastic and Inelastic
3. Two Dimensional (2D) Collisions/Explosions
4. Worksheets - 2D Collisions/Explosions - Try Some

FA - Intersection Problem (16/17)

A car and truck approach an intersection along perpendicular roads. The velocity of the car relative to the ground is 9.27 m/s, W and the velocity of the truck relative to the ground is 4.83 m/s, S. Find the velocity of the truck relative to the car.

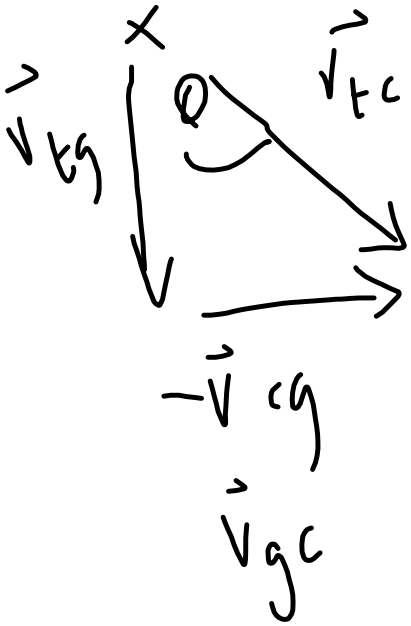


$\vec{V}_{cg} = 9.27\ m/s,\ W$

$\vec{V}_{tg} = 4.83\ m/s,\ S.$

$\vec{V}_{tc} = \vec{V}_{tg} + \vec{V}_{gc}$

$\vec{V}_{tc} = \vec{V}_{tg} - \vec{V}_{cg}$



$V_{tc} = \sqrt{V_{tg}^2 + V_{cg}^2}$

$V_{tc} =$ ⊖ m/s.

$\tan\theta = \frac{\square}{\square}$

$\theta =$ ___ ° E of S.

Science 10

Tuesday, October 17/17

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

http://mvhs-sherrard.weebly.com/

---

1. Return - FA: Identifying and Balancing Chemical Equations
2. Review: SA - Chem #2 - Answers - See Next Page
3. SA - Chem #2 - Friday, October 20/17
4. ABC Brainstorming - HW

---

5. Translating Word Equations to Balanced Chemical Equations
6. Worksheet: Translating Word Equations
7. Predicting Products
8. Worksheet: Predicting Products

Key

Science 10

Review for SA: Chem #2

Part 1 – Multiple Choice

Print the letter of the best answer on the line provided.

M. Oct. 16/17

A 1. In a chemical reaction, Substance A and Substance B combine to form a new substance, AB. In this reaction,
A) A and B are the reactants.
B) A, B and AB are the reactants.
C) AB is the reactant.
D) A and B are the products.

A 2. In a combustion reaction, one of the reactants must be ____.
A) oxygen
B) carbon dioxide
C) water
D) carbon monoxide

B 3. A single replacement reaction can be compared to:
A) two dancing couples switching partners
B) a person "cutting in" on a dancing couple
C) two single people joining for a dance
D) a couple breaking up

C 4. In a chemical reaction,
A) the atoms of the reactants always stay together to form the products.
B) new atoms are formed which combine to make the products.
C) the atoms of the reactants unbond, rearrange, and then rebond to form the products.
D) some atoms disappear while others multiply to form the products.

C 5. What does the symbol → in a chemical equation mean?
A) reactant
B) numerical coefficient
C) yields
D) product

B 6. If you rewrite the following word equation as a chemical equation, what will be the symbol for fluorine?

nitrogen trifluoride → nitrogen + fluorine

A) F
B) F_2
C) F_3
D) F_6

D 7. The _____ states the mass of reactants has to be equal to the mass of the products in a chemical reaction.
A) The Law of Definite Proportions
B) The Law of Multiple Proportions
C) The Law of Chemical Reactions
D) The Law of Conservation of Mass

D 8. Hydrocarbons must contain
A) hydrogen
B) hydrogen and oxygen
C) carbon
D) carbon and hydrogen

Part 2 – Names and Chemical Formulas
Complete the table below.

Name of Compound	Formula of Compound
Silver phosphide	Ag_3P
bismuth (V) Sulfate	$Bi_2(SO_4)_5$
ammonium selenide	$(NH_4)Se^{2-} \rightarrow (NH_4)_2Se$
nitrogen triiodide	NI_3
zinc chloride	$Zn^{2+}Cl^- \rightarrow ZnCl_2$
diselenium hexasulfide	Se_2S_6
barium borate	$Ba^{2+}(BO_3)^{3-} \rightarrow Ba_3(BO_3)_2$
tetrabromine octochloride	Br_4Cl_8
pentaphosphorus decaoxide	P_5O_{10}
manganese (IV) Carbonate	$Mn(CO_3)_2^{-2}$ (+4 −4)
iron (III) arsenide	$Fe^{3+}As^{3-} \rightarrow FeAs$

Part 3 – Identifying and Balancing Chemical Equations

I. Indicate the type of each equation by printing F (formation), D (decomposition), SR (single replacement), DR (double replacement) or C (combustion) on the line provided.
II. Balance each reaction.

DR 1. $3\,Ag_4SiO_4 + 4\,GaBO_3 \rightarrow 4\,Ag_3BO_3 + \_\_\_\,Ga_4(SiO_4)_3$

SR 2. $6\,Na + \_\_\_\,Cr_3P_2 \rightarrow 2\,Na_3P + 3\,Cr$

DR 3. $\_\_\_\,Mg_3As_2 + 6\,KF \rightarrow 3\,MgF_2 + 2\,K_3As$

C 4. $\_\_\_\,C_9H_{20} + 14\,O_2 \rightarrow 9\,CO_2 + 10\,H_2O$ (18 + 10 = 28)

SR 5. $2\,BiCl_5 + 5\,I_2 \rightarrow 2\,BiI_5 + 5\,Cl_2$

D 6. $2\,Al_2O_3 \rightarrow 4\,Al + 3\,O_2$

F 7. $16\,Li + \_\_\_\,S_8 \rightarrow 8\,Li_2S$

C 8. $\_\_\_\,C_6H_{14} + \frac{19}{2}\,O_2 \rightarrow 6\,CO_2 + 7\,H_2O$

1 1 12+7 = 19.

2 19 12 14

Science 10

FA: Identifying and Balancing Chemical Equations #1A (Oct. 16/17)

Name - _____

I. Indicate the type of each equation by printing F (formation), D (decomposition), SR (single replacement), DR (double replacement) or C (combustion) on the line provided.

II. Balance each reaction.

DR 1. ____$MgCl_2$ + ____$AgNO_3$ → ____$Mg(NO_3)_2$ + ____AgCl

C 2. ____C_7H_{16} + ____O_2 → ____CO_2 + ____H_2O

D 3. ____NaF → ____Na + ____F_2

SR 4. ____Li + ____$CuSO_4$ → ____Li_2SO_4 + ____Cu

F 5. ____Pb + ____N_2 → ____Pb_3N_4

SR 6. ____CS_2 + ____F_2 → ____CF_4 + ____S_8

DR 7. ____$CaBr_2$ + ____Na_3P → ____Ca_3P_2 + ____NaBr

C 8. ____C_4H_{10} + ____O_2 → ____CO_2 + ____H_2O

Name: _____ Date: _____ Class Period: ____

Science 10

ABC BRAINSTORMING

Topic: Chemistry to Chemical Reactions

A	G	M	S
B	H	N	T
C	I	O	U
D	J	P	V
E	K	Q	W
F	L	R	XYZ