**Intro to R, S Enantiomers** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ # \_\_\_\_

Self-Directed Class Assignment for a **LAB GRADE**. (\**note: you may work in groups of 2, but each must turn in his/her own lab.* ***You have 2 class periods/blocks to complete this and IMMEDIATELY turn in, so don’t waste any class time!*** USE PENCIL AND ERASE THOROUGHLY! Marking out=deduction

\**No Help* from me today. I want to observe each of you critically thinking it out for yourselves. Be confident! (Yes…I will answer questions tomorrow...just be sure to write down any questions you have)

1. Review this video: (\**I can log in to 3-4 computers in my room for students to view, if Cobb Co. still doesn’t allow students to access* [*www.youtube.com*](http://www.youtube.com) *OR show from my computer*) <https://www.youtube.com/watch?v=yZ8JDDnyxC4&index=1&list=PLaySzQJTCO1nsM3ItT8irQ650tYgjHk6i>
2. Next, watch one (or both) of the following: <https://www.youtube.com/watch?v=WW6oAqVNBR8&index=2&list=PLaySzQJTCO1nsM3ItT8irQ650tYgjHk6i>

<https://www.youtube.com/watch?v=Z10oC7BF4ig>

1. Go to Ch 15 (Chirality) in your book. Read Sections 15.1 and 15.2. \****Refer to ‘How To…’ on p. 424 and 425 as needed***
2. Define the following terms and/or answer questions (you may write answers on a separate page, if you wish, and attach to the back of this lab. Regardless, **BE CLEAR AND BE NEAT!**):
3. Enantiomer-
4. Chiral-
5. Achiral-
6. Stereocenter-
7. Racemic mixture-
8. Review example 15.1. Do Problem 15.1. ALWAYS KEEP ANY ‘H’ GROUPS BEHIND THE PLANE!

A-

B-

1. R,S system-
2. Explain how priority is assigned to substituents (be VERY CLEAR!), after reading p. 427
3. Review Example 15.2. Do problem 15.2

b.

1. Read the bottom third of p. 428. Where should the lowest priority group be (3 dimensionally)?
2. How is this analogous to a steering column?
3. If reading the groups 1,2,3 in a clockwise direction, the molecule is designated \_\_\_\_\_\_\_.
4. If reading the groups 1,2,3 in a counterclockwise direction, the molecule is designated \_\_\_\_\_\_\_.
5. Review Exp 15.3. Get a model kit and build 2- butanol (a). Orient the structure so that the lowest priority group is pointed **away** from you. **Draw the structure** of that configuration and assign priorities 1, 2 and 3 (see table 15.1). H is priority 4 and should be in the ‘back’. Draw a circular arrow from the group with highest priority to the one with lowest. Below your drawing, state if it is R or S.
6. Build Alanine (b). \*Note: Alanine is an amino acid (one of 20 protein monomers). Follow the same procedure as above.
7. Do problem 15.3 p. 429 (follow the procedures from ‘n’ and ‘o’ above) for glyceraldehyde, a simple carbohydrate discussed in Biology (If you need a ‘trigger’ to recall it, see ‘Ch 20- Carbohydrates’ p. 518-520 and ‘Ch 28- Cellular Respiration’ p. 750).
8. **Use your model kits in conjunction with the following activity**: Open the following website on a desktop computer (you may pair up): <http://sites.saintmarys.edu/~pbays/Programs/Stereochemistry/3D.htm>
9. Notice you can rotate the molecule to view 3D. Answer questions from the first problem on the site. Additionally, put your answers in the space below:
10. Go to the next problem. Follow the same directions as #5.
11. Do a minimum of 5 more problems (7 total MINIMUM). Put the answers for each below CLEARLY (or use another sheet and staple to the back of this sheet).

CW/HW-

1. Draw the flow chart from p. 421 (you must know this!). You may use another sheet of paper and attach, if needed