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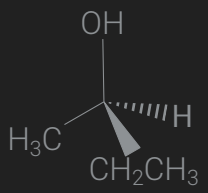
1. Based on the Cahn Ingold Prelog rules, rank the following in order of lowest to highest priority.

   CH_3 CH_2CH_3 CH_2CH_2OH $CH_2CH_2NH_2$ CH_3CHO

   ▷ **$CH_3 < CH_2CH_3 < CH_2CH_2NH < CH_2CH_2OH < CH_3CHO$**

   - Relevant notes (highlighted applies to this problem):
     - **Chan-Ingold-Prelog system**: a system of nomenclature for Identifying each enantiomer individually.
       (a) Assign priorties to each of the four groups based on atomic number; the highest atomic number has the highest priority.
       (b) Rotate the molecule so that the fourth priority group is on a dash (behind)
       (c) Determin the configuration, i.e., sequence of 1-2-3 groups.
       · clockwise (R) or counterclockwise (S).
     - If there is a tie between the atoms connected, then continue outward until a difference is found.
       · Do not add the sum all atomic numbers attached to each atom, just the first in which the atoms differ.
       · Any multiple bonded atom, (2 or 3) is treated as if connected to multiple atoms equal to number of bonds.
   - First difference is the NH_2 vs OH_2; oxygen has more mass.
   - Leaves difference between CH_2OH vs CHO; oxygen is double bonded in the latter, so really CHOO (O beats H).

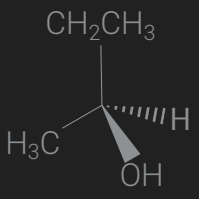
2. Determine the absolute configuration of the following molecule.



   ▷ **R**

   - 3 clockwise(R)
   - H = 4, CH_3 = 3, CH_2CH_3 = 2, OH = 1.
   - Lowest priority is already in the back, leave as is.

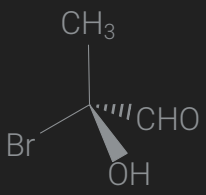
3. The molecule shown below is the enantiomer of the molecule shown in the previous question. What is its absolute configuration?



▷ **S**

- Swap 1 and 2, swap the configuration; R ⟶ S

4. What is the absolute configuration of the molecule shown below?



▷ **R**

- Once lowest priority is assigned to dashed wedge(aka cram), then one can tell sequence. Original is an S.