

Different kinds of Mirrors

While working in a group make sure you:

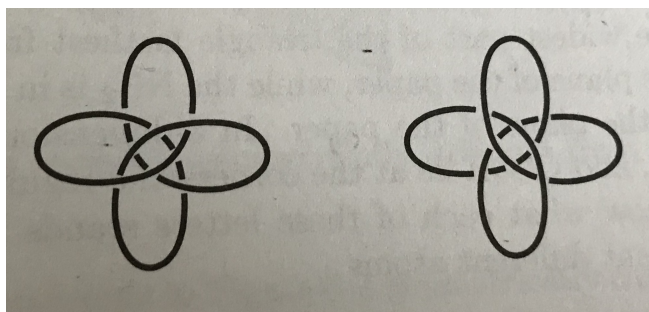
- Expect to make mistakes but be sure to reflect/learn from them!
- Are civil and are aware of your impact on others.
- Assume and engage with the strongest argument while assuming best intent.

1. UW Tacoma has some fixed chairs in KEY 102 shown in the picture below on the left and some new chairs in ADMC GWP 212 shown on the picture on the right. Determine if the chairs are for left-handed, right-handed, or either students.



from UW Tacoma's website

2. Determine if the two knots below are geometrically equivalent or not.



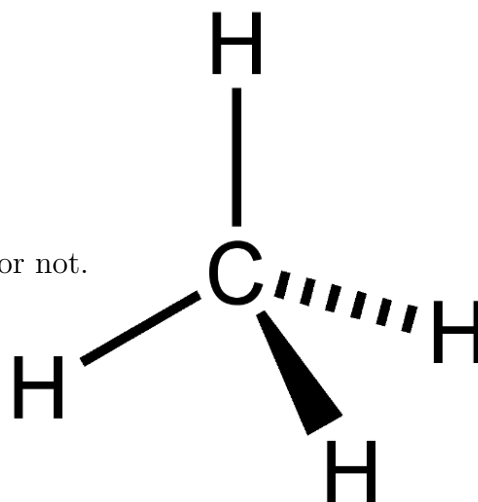
Knots, Molecules, and the Universe: An Introduction to Topology page 293

Definition Geometric Mirror Symmetry. *An object has geometric mirror symmetry if there is a finite sequence of rigid motions (rotations and translations of the object) in space that takes the original object to its mirror image.*

3. Is the above definition well defined? That is, if there is a *choice* at any point in the process, are we sure that your choice does not change if an object has geometric mirror symmetry or not.

4. Consider Methane drawn using Chemistry notation for 3D objects:

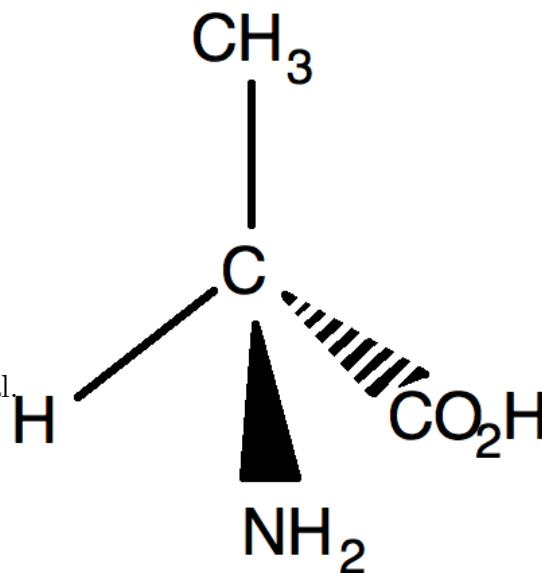
(a) Draw the mirror image to Methane.



(b) Determine if Methane is geometrically chiral or not.

5. Consider L-alanine drawn using Chemistry notation for 3D objects:

(a) Draw the mirror image to L-alanine.



(b) Determine if L-alanine is geometrically chiral.