Week (5) Worksheet #3

Topics Covered:
- Nomenclature
- Chair conformers
- Newman projections
- Energy of conformers

1) Provide a systematic name for each of the following compounds:

2) Draw an energy diagram showing a conformational analysis of 1,2-dichloroethane. Clearly label all staggered conformations and all eclipsed conformations with the corresponding Newman projections.

(Adapted from Klein 4th Ed. 4.36)

(Klein 4th Ed. 4.45)
3) Draw a bond-line structure for each of the following compounds:

![Bond-line structures](image)

(Adapted from Klein 4th Ed. 4.47)

4) Consider the structures of *cis*-decalin (left) and *trans*-decalin (right).
   (a) Which of these compounds would you expect to be more stable?
   (b) One of these two compounds is incapable of ring flipping. Identify it and explain your choice.

![Bond-line structures](image)

(Klein 4th Ed. 4.77)
5) Draw the second possible chair conformation for each compound.

![Chair Conformations](image1)

(Smith 6th Ed. 4.53)

6) Draw the two chair conformations for each molecule. Then, circle the most stable conformer.

![Chair Conformations](image2)

(Adapted from Smith 6th Ed. 4.57)