1. Supply the name or the structure in the following problems (2 pts each):

Name the following:

*Structure diagram*

a. 4-methyl-6-methyl-7,7-dimethylnonane
b. 3,3-dimethyl-4-methyl-6-methylnonane
c. 4,6,7,7-tetramethylnonane
d. 3,3,4,6-tetramethylnonane

Which of the following is a depiction of *cis-1,3-diisoproplycyclohexane*?

*a. **Structure diagram** b. **Structure diagram** c. **Structure diagram** d. **Structure diagram*"

Name the following:

*Structure diagram*

a. (R)-3-methylhexane
b. (S)-3-methylhexane
c. (R)-3-methylheptane
d. (S)-4-methylhexane
2. Draw the corresponding chair conformations (2 pts each) and circle the most stable (1 pts each).

3. Draw the corresponding Newman Projection looking down carbons 2 and 3 and then draw it's more stable conformer (2 pt each).
4. Identify the relationships between A and the other isomers. Use the initial letters for the relationship type (e.g. diastereomers, D; enantiomers, E; identical, I; constitutional isomers, C) (2 pts each).