

**Ch 331**

Name \_\_\_\_\_

**Quiz #2 (Chapter 3)**

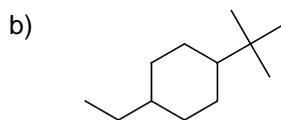
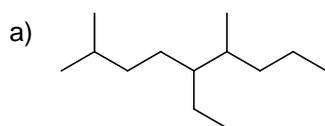
Due: 10:05 am Friday, Oct. 13, 2000

Grade \_\_\_\_\_

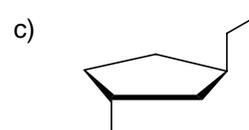
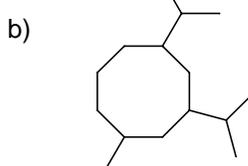
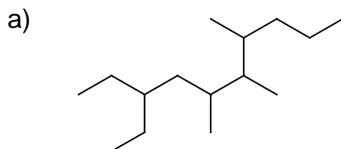
(50 pts)

(Note: There will be no partial credits! Please pay attention to details)

1. (9 pts) Draw the structures of the following compounds. (Either condensed or line-angle drawing is acceptable.)
- 5-Ethyl-2,6-dimethylnonane
  - 1-*tert*-Butyl-4-ethylcyclohexane
  - cis*-1-Ethyl-2-methylcyclopentane

**Answer:**3 pts each.

2. (9 pts) Provide the IUPAC names for the following compounds. Include *cis* or *trans* where appropriate.

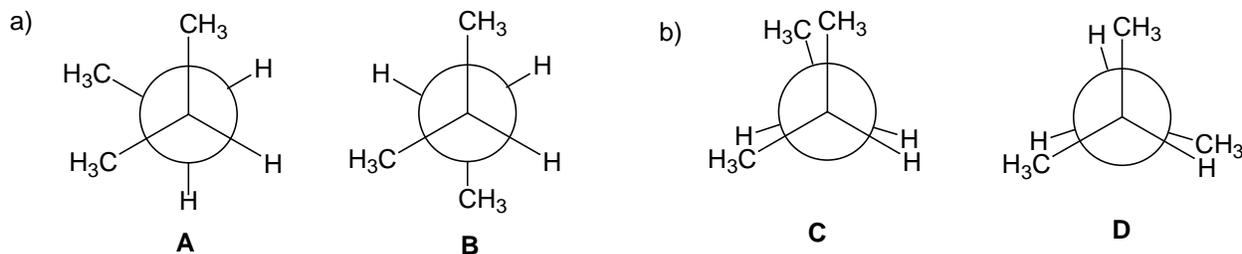
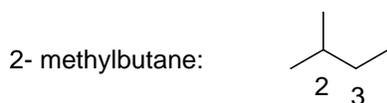
**Answer:**

- 3-Ethyl-5,6,7-trimethyldecane
- 1,3-Diisopropyl-5-methylcyclooctane
- trans*-1-Ethyl-3-methylcyclopentane

3 pts each.

3. (10 pts) Looking along the bond between carbons 2 and 3 of 2-methylbutane.
- draw the two different staggered conformations;
  - draw the two different eclipsed conformations;
  - indicate which is the most stable conformation, and which is the least stable conformation.

**Answer:**



c) The most stable conformation is **B**, where the two methyl groups (one on C-2 and one on C-3) are in anti staggered conformation. The least stable conformation is **C**, where the two methyl groups are in eclipsed conformation

a): 4 pts; 2 pts for each Newman projection.

b): 4 pts; 2 pts for each Newman projection.

c): 2 pts

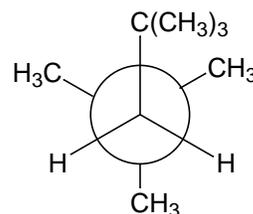
4. (10 pts) For the Newman projection shown at the right,

a) draw the condensed structure of this molecule;

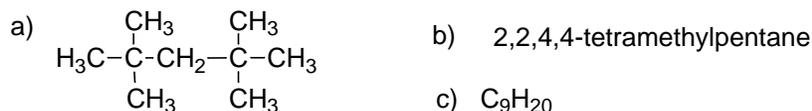
b) write its IUPAC name;

c) write the molecular formula of this compound;

d) draw structures of ALL possible constitutional isomers of this compound that is a pentane AND contains at least one ethyl group.



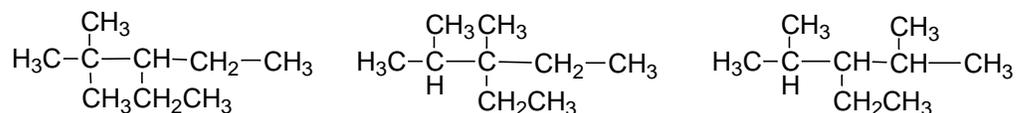
**Answer:**



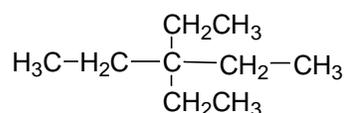
c)  $\text{C}_9\text{H}_{20}$

d)

pentanes with 1 ethyl and 2 methyl substituents



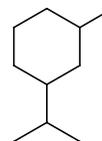
pentane with 2 ethyl substituents



- a): 2 pts
- b): 2 pts
- c): 2 pts
- d): 4 pts

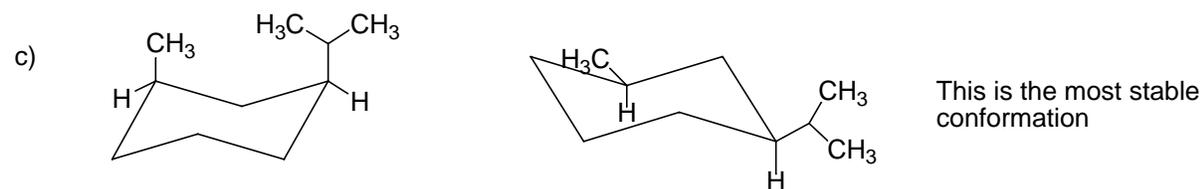
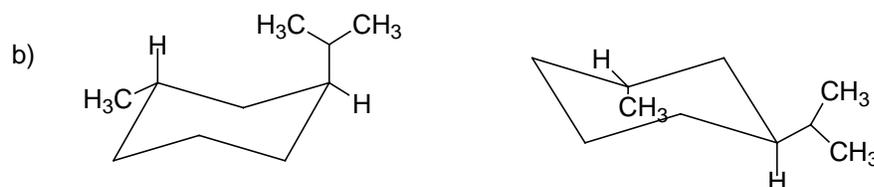
5. (12 pts) For the structure shown at the right,

- a) write the IUPAC name of this compound;
- b) draw the chair conformations of the trans isomer;
- c) draw the chair conformations of the cis isomers, AND indicate the most stable conformation.



**Answer:**

a) 1-Isopropyl-3-methylcyclohexane



- a): 2 pts
- b): 4 pts. 2 pts for each structure.
- c): 6 pts. 2 pts for each structure; 2 pts for indicating the most stable conformation.