1. Name the following molecules using IUPAC nomenclature.
   a. 
      ![Molecule A]
   b. 
      ![Molecule B]
   c. 
      ![Molecule C]

2. Draw the following compounds
   a. 2-isopropyl-4,6-dimethylnonane
b. 2-dimethyl-4-propylcyclohexane

3. Draw the following molecules.
   a) 1-tert-butylcyclohexane

b) 2-sec-butylpentane

4. Name the parent chain in the following molecules.
5. Name each branch (substituent) and identify the carbon number of the parent chain at which it occurs

![Branches](image)

6. Give the IUPAC name for each cyclohexane.

![Cyclohexanes](image)

7. Rank this group of alkanes in order of increasing boiling point. Justify the order.

\[
\text{CH}_3\text{CH}_2\text{CH}_2\text{CH(CH}_3)_2 \quad \text{CH}_3\text{(CH}_2)_4\text{CH}_3 \quad \text{(CH}_3)_2\text{CHCH(CH}_3)_2
\]

8. Explain why each of the following IUPAC names are incorrect.

2-methyl-2-isopropylheptane

5,5,6-trimethyloctane

1,3-dimethylbutane

5-ethyl-2-methylhexane