Year 12 Science: Naming and drawing organic compounds

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. Name $CH_3CH_2CH_2CH_2OH$.

2. Name $CH_3CH(CH_3)CH_2CH_2CH_3$.

3. Name $CH_3CH_2CH{=}CHCH_3$.

4. Name $CH_3CH_2CH_2COOH$.

5. Is $CH_3CBr(CH_3)CH_3$ primary, secondary or tertiary, and what is its name?

Exam-style question: three bottles of $C_4H_{10}O$

A technician finds three unlabelled bottles, each holding a compound with the formula $C_4H_{10}O$: butan-1-ol, butan-2-ol and 2-methylpropan-2-ol.

6. Draw the structural formula of butan-2-ol and classify it as primary, secondary or tertiary.

7. Name a constitutional isomer of butan-1-ol, also an alcohol, that is not in the bottles.

8. The technician also has but-1-ene and but-2-ene. Explain which of the two forms geometric isomers.

9. Butan-1-ol dissolves only partly in water, but ethanol mixes completely. Discuss why, using the structure of each molecule.

Fix the mistake

10. Correct this statement: "$CH_3CH_2CH_2CH(CH_3)CH_3$ is 4-methylpentane."

11. Correct this statement: "$CH_3CH_2CH(CH_2CH_3)CH_3$ is 2-ethylbutane."

12. Correct this statement: "But-1-ene has cis and trans isomers because it has a C=C double bond."

13. Correct this statement: "Butan-1-ol boils higher than butane because its O–H bond takes more energy to break."