

Activity 17: Hydrocarbons and Fatty Acids

Learning Objectives

Part 1 *Establish a trend for the boiling points of alkanes*

Part 2 *Gain familiarity with the characteristics of free fatty acids*

Recognize the functional group carboxylic acid

*Draw a free fatty acid in skeletal structure given the number of carbons,
unsaturations, and omega number*

Estimated Completion Time 45 Minutes

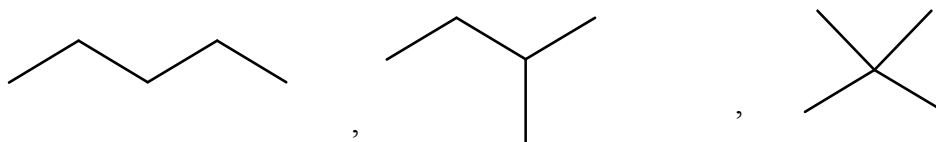
Instructor Information

Some textbooks use the ω -numbers, whereas others use the IUPAC (Δ) numbering for fatty acids (Part 3). The omega numbers are in more common use.

ANSWERS TO QUESTIONS

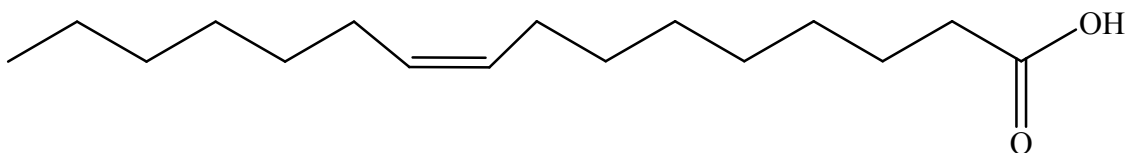
Part 1. Straight-Chain Alkanes

1. Yes there is a pattern. C_nH_{2n+2} where n is the number of carbon atoms.
2. Yes. -ane
3. The boiling points for straight-chain increase with increasing carbon number.
- 4.

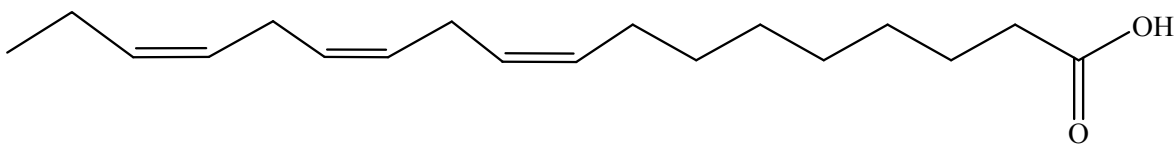


Part 2. Free Fatty Acids Are Mainly Hydrocarbon

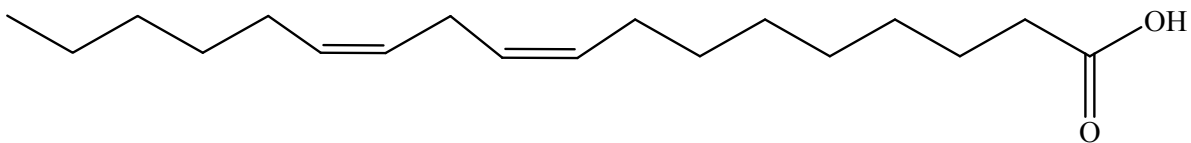
1. alkane, carboxylic acid (COOH)
2. Carbons 9 and 10
3. [Number of carbons: number of double bonds]
- 4.



5.



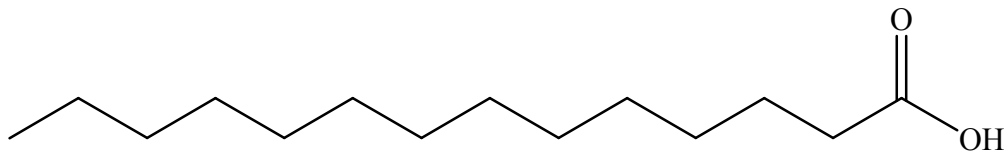
6.



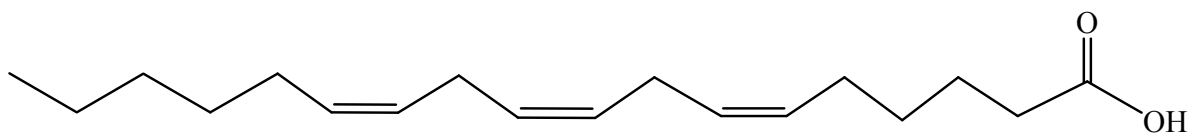
7. The nonpolar portions are the hydrocarbon portions.

Activity 17: Skill Development—Free Fatty Acids Are Mainly Hydrocarbon

1.



2.



3.

