1) BASIC ALKANES

LODEST SUM RULE: Determines numbering order
ALPHABET RULE: Determines order IN NAME

isopropyl sec-butyl tert-butyl isobutyl

4.8. For each of the following compounds, we assign its name via a four-step process: First identify the parent, then the substituents, then assign locants, and finally, arrange the substituents alphabetically. In each case, use commas to separate numbers from each other, and use hyphens to separate letters from numbers.

(a) 3,4,6-trimethyloctane
(b) sec-butylcyclohexane
(c) 3-ethyl-2-methylheptane
(d) 3-isopropyl-2,4-dimethylpentane
(e) 3-ethyl-2,2-dimethylhexane
(f) 2-cyclohexyl-4-ethyl-5,6-dimethyloctane
(g) 3-ethyl-2,5-dimethyl-4-propylheptane
(h) 2,2,6,6,7,7-hexamethylnonane
(i) 4-tert-butylheptane
(j) 1,3-diisopropylcyclopentane
(k) 3-ethyl-2,5-dimethylheptane

4.9. Draw a bond-line drawing for each of the following compounds:
(a) 3-Isopropyl-2,4-dimethylpentane
(b) 4-Ethyl-2-methylhexane
(c) 1,1,2,2-Tetramethylcyclopropane

2) POLYCYCLIC ALKANES

PARENT: Cyclo [x.y.z] - M A N E

NUMBER LARGEST PATH, THEN 2ND LARGEST, THEN 3RD
BRIDGE HEAD TO BRIDGE HEAD

IF POSSIBLE, GIVE SUB.
LOWEST NUMBER:
4.11 Name each of the following compounds:

(a) 
(b) 
(c) 
(d) 
(e) 

4.12 Draw a bond-line structure for each of the following compounds:

(a) 2,2,3,3-Tetramethylbicyclo[2.2.1]heptane  
(b) 8,8-Diethylbicyclo[3.2.1]octane

(c) 3-Isopropylbicyclo[3.2.0]heptane

4.11. For each of the following compounds, we assign its name via a four-step process: First identify the parent, then the substituents, then assign locants, and finally, arrange the substituents alphabetically. When assigning locants, make sure to start at a bridgehead and continue numbering along the longest path to the second bridgehead. Then continue assigning locants along the second longest path, and then finally, along the shortest path that connects the two bridgehead positions.

(a) 4-ethyl-1-methylbicyclo[3.2.1]octane
(b) 2,2,5,7-tetramethylbicyclo[4.2.0]octane
(c) 2,7,7-trimethylbicyclo[4.2.2]decanne
(d) 3-sec-butyl-2-methylbicyclo[3.1.0]hexane
(e) 2,2-dimethylbicyclo[2.2.2]octane