## **Alkanes Homework Key**

Draw the structures of the following alkanes. Use both groups connected to each other and stick structures. For example:

propane  $CH_3 - CH_2 - CH_3$  $\begin{array}{c} \text{CH}_3 \\ \text{CH}_2 \\ \text{CH}_2 \\ \text{CH}_2 \\ \text{CH}_2 \\ \text{CH}_2 \\ \text{CH}_2 \\ \text{CH}_3 \\ \text{CH}_3 \\ \text{CH}_2 \\ \text{CH}_3 \\ \text{CH}_2 \\ \text{CH}_3 \\$ octane CH<sub>3</sub> CH CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub> 2-methylpentane  $CH_{2}$   $CH_{2}$   $CH_{2}$   $CH_{2}$   $CH_{2}$   $CH_{2}$   $CH_{2}$   $CH_{2}$   $CH_{3}$   $CH_{2}$   $CH_{2}$   $CH_{2}$   $CH_{3}$   $CH_{3}$   $CH_{2}$   $CH_{3}$   $CH_{3}$  C3-ethyl-4-propyloctane CH<sub>2</sub> CH<sub>3</sub>  $CH_{3}$   $CH_{3}$   $CH_{3}$   $CH_{2}$   $CH_{2}$   $CH_{2}$   $CH_{2}$   $CH_{3}$   $CH_{2}$   $CH_{2}$   $CH_{3}$ 3-t-butylhexane CH<sub>3</sub>. 5-s-butyldecane CHa  $CH_{3} CH_{1} CH_{3} CH_{1} CH_{3} CH_{1} CH_{2} CH_{3}$ 3-isopropylpentane CH<sub>3</sub>  $H_2C$ ethylcyclobutane 1-*i*-isobutyl-4-methylcyclohexane  $CH_3 - CH_2 -$ 

What is the correct systematic name (both new & old (if applicable)) for the following structures?

 $CH_3 - CH_2 - CH_2 - CH_2 - CH_3$  n-hexane



What is wrong with the following name for the associated structure? Fix the problem.



2-methyl-4-isopropyl pentane The chain is actually 6 carbons long. Therefore, the name is 2,3,5-trimethylhexane.