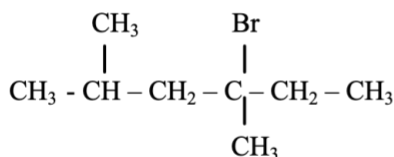
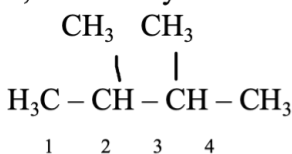


Chemistry 2, HW 15

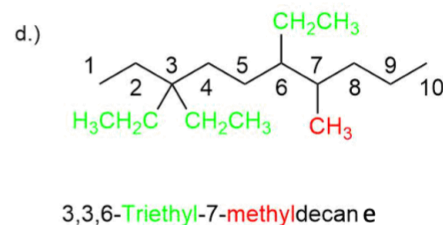
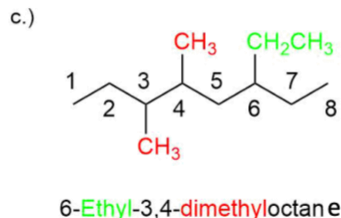
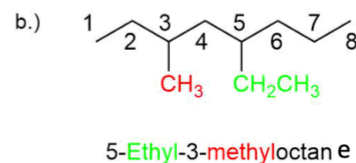
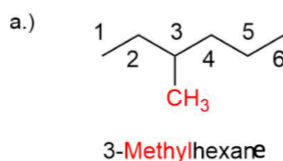
How to name alkanes;

1. Draw the main chain of carbon atoms, give the name
2. Number the chain and see where the substituents are on the chain.
3. Check the number of hydrogens. Give the location and name of each substituents as a prefix to the name of the main chain.

2,3 – dimethylbutane



4-bromo – 2,4-dimethylhexane



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Sometimes substituents can be written in parenthesis to avoid drawing the bonds, for example: 2,3 – dimethylebutane can be written as $\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}(\text{CH}_3)\text{CH}_3$

Questions:

1. Give the systematic name for each compound (I did not write all the bonds, they are presumed):
 - a. $\text{CH}_3\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_3$
 - b. (the groups in parenthesis are substituents)
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{C}(\text{CH}_2\text{CH}_3)_2\text{C}(\text{CH}_3)_2\text{CH}_2\text{CH}_3$
2. The density of pentane 0.63 g/mL.
 The heat of combustion for pentane 845 kcal/mol.
 How much heat is produced when 1 gallon of pentane is burned (1Ga = 3.78 L)