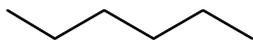Lecture 2 – Selected answers to homework

12.46 most of the answer s are in the book. Here are some other possible aswers:
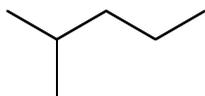   b. 5-(1-methylethyl)-3-methyloctane
        d. 4-(1-methylethyl)-4-methyloctane
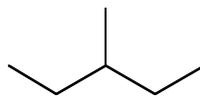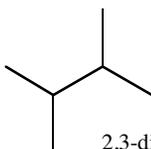12.47

Hexane   2-Methylpentane   3-Methylpentane
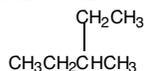

2,2-dimethylbutane   2,3-dimethylbutane

12.48 answers in the book
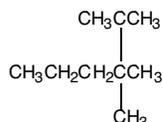12.51 (a) Ethylcyclooctane (b) 1,2-Diethyl-3-methylcyclopropane (c) 2-ethyl-1-methyl-3-propylcyclopentane
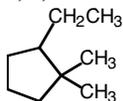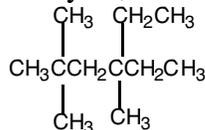12.53

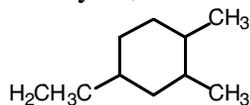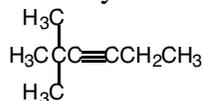| Structure	Error
CH_2CH_3 $CH_3CH_2CHCH_3$ 3-Methylpentane	The longest carbon chain is a pentane and should be used as the root name
CH_3CCH_3 $CH_3CH_2CH_2CCH_3$ CH_3 2,3,3-Trimethylhexane	The longest carbon chain is a hexane and should be used as the root name
CH_2CH_3 CH_3 CH_3 2-Ethyl-1,1-dimethylcyclopentane	The substituents should be given the lowest possible numbers
CH_3 CH_2CH_3 $CH_3CCH_2CCH_2CH_3$ CH_3 CH_3 4-Ethyl-1,2-dimethylcyclohexane	Numbering must start from the end nearer the first substituent
CH_3 H_2CH_3C CH_3 4-Ethyl-1,2-dimethylcyclohexane	Substituents must be cited in alphabetical order (prefixes are not used for alphabetizing)
CH_2CH_3 $CH_3CHCH_2CHCH_3$ CH_2CH_3 3,5-Dimethylheptane	The longest carbon chain is heptane and should be used as the root name

13.27 (a) *meta* (b) *para*
13.30 answers in the book
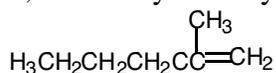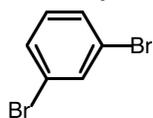13.32 answers in the book
13.73
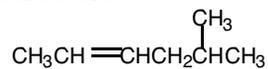
Structure	Error
CH₃CH=CHCH₂CH(CH₃)CH₃ 5-Methyl-2-hexene	Numbering should start from the end near the double bond
H₃C—C(CH₃)(CH₃)—C≡CCH₂CH₃ 2,2-Dimethyl-3-hexyne	Numbering should start from the end nearer the first substituent
H₃CH₂CH₂CH₂CH₂C(CH₃)=CH₂ 2-Methyl-1-hexene	The longest chain should be used as the base name
m-dibromobenzene (1,3-Dibromobenzene)	Substituents should receive the lowest possible numbers. It is better to name this compound as *m*-disubstituted benzene
3,4-Dimethylcyclohexene	The double bon receives the lowest number (Fro cyclic alkenes, the double bond receives no number but is understood to be between 1 and 2)
H₂C=CHC(CH₃)=CHCH₃ 3-Methyl-1,3-pentadiene	The double bond should receive the lowest possible numbers