(a) 
$$C_{3}$$
  $C_{3}$   $C_{3}$  .  $C_{3}$  .  $C_{3}$  .  $C_{3}$  .  $C_{3}$  .  $C_{3}$  .  $C_{3}$  .

$$C - C - C = C - C - C$$
1 2 3 4 5 6

3 - hexyne.

(b) 
$$cy = c - \frac{c_{3}}{c_{1}}$$

$$C \equiv C - C - C$$
 but yne.

problem 9-1-2

3) write the full name.

3, 3- Dimethyl butyne.

(C)  $CH_3 - CH_2 - C = C - CH_2 - CH_3 - CH_3$ 

O Find the parent.

C - C - C - C = C - C - C - C

4 - octyne.

@ Find the substituents.

3-methyl, 3-methyl

3) Write the full name.

3, 3 - Dimethy 1-4-octyne.

(d)  $(H_3 - 4)_2 - \frac{4}{5} - \frac{4}{5} = \frac{4}{5}$   $\frac{4}{5}$  $\frac{4}{5}$ 

7.5.5 - Trimethy - 3 - heptyne.

O Find the parent

Cyclodecyme.

3) Find the substituents.

3) white the full name

6- Isoprom eydodegne.

(f) c/3-d=c/-c/= c/-c/= c-c/3

O Find the parent.

$$(-C = C - C = C - C = C - C$$

Double bunds receive lower number than triple bonds.

2.4 - octadien - 6-ync.

problem 9-3-1

(4) 
$$CH_3 - CH_2 - CH_3 - C = CH_4 + 2CI_2$$
.  
|Pentyme.  $CI_2 + 2CI_2$ .  
 $CM_3 - CM_2 - CM_2 - C = CH_4 + CI_2 - CI_3$ 

$$\rightarrow c_{13}-c_{13}-c_{13}-c_{13}-c_{14}-c_{15$$

$$\rightarrow CH_3 - CH_2 - CH_2 - C = CH + CI - CI$$

$$\rightarrow \qquad c_{13} - c_{12} - c_{12} - c_{13} - c_{14}$$

$$q q$$

1.1, 2, 2 - tetra Moro pentame.

problem 9-3-2.

$$\Rightarrow \qquad c = cy$$

$$Br \quad 4$$

(C) 
$$c_3 - c_5 - c_5 - c_5 - c_5 + HBt.$$

$$\rightarrow \frac{\alpha_3 - \alpha_2 - \alpha_2 - \alpha_2 - \alpha_3}{4} \quad \text{or} \quad \frac{\alpha_3 - \alpha_2 - \alpha_2 - \alpha_3}{4} - \frac{\alpha_3 - \alpha_2 - \alpha_3}{4} - \frac{\alpha_3 - \alpha_2 - \alpha_3}{4} - \frac{\alpha_3 - \alpha_3 - \alpha_3 - \alpha_3}{4} = \frac{\alpha_3 - \alpha_3 - \alpha_3 - \alpha_3 - \alpha_3}{4} = \frac{\alpha_3 - \alpha_3 - \alpha_3}{4} = \frac{\alpha_3 - \alpha_3 - \alpha_3}{4} = \frac{\alpha_3 - \alpha_3}$$

$$CM_3 - CM_3 - CM_3 - C = C - CM_3$$
 $1 \quad 1$ 
 $1 \quad 1$ 

$$a_{3}-a_{1}-a_{2}-a_{1}-c=c-a_{3}$$
 $a_{3}-a_{1}-a_{2}-a_{3}-c=c-a_{3}$ 
 $a_{3}-a_{1}-a_{2}-a_{3}-c=c-a_{3}$ 
 $a_{3}-a_{1}-a_{2}-a_{3}-c=c-a_{3}$ 

Problem 9-4-1

(a) 
$$cl_3 - cl_2 - cl_2 - c = c - cl_2 - cl_3 + H_g^{2} + So_4^{2}$$

$$\rightarrow c_{13} - c_{12} - c_{12} - c_{12} - c_{13} - c_{13} + H - a_{14}^{2}$$

$$H_{9} = 0.4$$

$$\Rightarrow c_{13} - c_{12} - c_{12} - c_{12} - c_{12} - c_{13} + h_{50};$$

$$k_{1}$$

$$k_{1}$$

$$k_{204}$$

$$k_{1}$$

$$k_{204}$$

$$k_{1}$$

$$k_{204}$$

$$k_{1}$$

$$k_{204}$$

$$k_{204}$$

$$k_{304}$$

$$\Rightarrow R, \frac{20}{c} = \frac{1}{c} - R, \Rightarrow R, -\frac{1}{c} = \frac{2}{c} - R,$$

$$\frac{11}{49} = \frac{2}{c} - R,$$

$$\frac{11}{49} = \frac{2}{c} - R,$$

$$\frac{11}{49} = \frac{2}{c} - R,$$

$$\rightarrow R_1 - c - c - R_1 \rightarrow R_2 - c = c - R_1 + Hg^{*\dagger} so_4^{*\dagger}$$

Problem 9-4-2.

(4)  $R_1 = \frac{1}{2} = \frac{1}{2} - R_1$  (Enol tautomer)  $\Rightarrow R_1 = \frac{1}{2} - \frac{1}{$ 

CH3 - Ch - Ch - C = 1 - Ch - Ch - Ch

51-P1-10-1

Problem 9-4-3.

(b) 
$$CH_3$$
  $CH_3$   $CH_$ 

$$-> cH_3 - cH_2 - cH_2 - cH_3 - cH_3$$

$$-> 4/3 - 4/2 - 4/2 - 4/2 - 4/3 - 4$$

$$- > cH_3 - cH - cH_2 - c - c - cH_3 - cH_3 - cH_3 + H_3 0:$$

$$H_3 = cH_3 - cH_2 - cH_3 - cH_3 - cH_3 + H_3 0:$$

$$\rightarrow CH_3 - CH - CH_2 - CH_2 - CH_2 - CH_3 -$$

$$-> cH_3 - cH - cH_2 - c = c - cH_2 - cH_3 + H_9^{24} \times O_4^{24}$$

Problem 9-4-4.

$$\rightarrow cH_3 - cH_2 - c = c - cH_2 - cH_3 - cH_3 + H - a'$$

$$+ 49504$$

$$\frac{149504}{11094}$$

$$-3 \quad \text{CM}_3 - \text{CM}_2 - \text{CM}_2 - \text{CM}_3 -$$

$$\rightarrow cH_3 - cH_2 - cH_2 - cH_2 - cH_3 - cH_3 = cH_3$$

Problem 9-4-5.

$$\begin{array}{c} \text{cb}) \\ \rightarrow & \text{cl}_3 \\ -\text{cl}_3 - \text{cl}_2 - \text{cl}_2 - \text{cl}_2 - \text{cl}_3 \\ +\text{lg} \text{SO} 4 \end{array}$$

$$- > cy_3 - cy_2 - cy_2 - cy_3 - cy_$$

Problem 9-5-1.

(a)   
 
$$cll_3 - cll_2 - cll_2 - cll_3$$
 (?)

$$CN_3 - CN_2 - CN_2 - C = CH$$
  $\frac{1_{12}O, H_0SO_4}{H_9SO_4}$   $CN_3 - CN_3 - CN_2 - C = CH$   $\frac{1_{12}O, H_0SO_4}{H_9SO_4}$ 

$$\frac{1}{20} \Rightarrow \alpha_3 - \alpha_2 - \alpha_2 - \alpha_3 - \alpha_4 - \alpha_5 - \alpha_4$$

Problem 9-5-2

$$\frac{H_2 O}{} > CH_3 - CH_2 - C = C - CH_3$$

CI is secondary carbon and has 2 substituents.

(2 is primary corr bon and has I substituent.

C1 Is more storle crowding than C2.

$$\begin{array}{c} \langle O \rangle - CH = CH \\ BH \end{array} + \begin{array}{c} MaOH + H - \tilde{o} - OH \\ \hline MAH + OH \end{array}$$

> next

Problem 9-6-2.

=> next

Problem 9-6-3

$$\Rightarrow \langle O \rangle = c = c - 4$$

$$\downarrow 0 \rangle$$

$$\rightarrow \langle \underline{0} \rangle - \underline{\hat{c}} - \underline{c}$$

(b) 
$$cH_3 - cH_3 - cH_3 - cH_3 - cH_3$$
 (?)

$$CI_{3}$$
 $CI_{3}$ 
 $CI_{3}$ 

$$\longrightarrow CN_3 - CN_3 - CN_3$$

$$\longrightarrow CN_3 - CN_3 - CN_3$$

$$\frac{1}{2} \frac{1}{2} \frac{1}$$

$$cy_3 - cy - c = c - cy - cy_3 \ \left\langle Enol + automor \right\rangle$$

(a) 
$$cM_3cM_2cM_2cM_2$$
  $c=cM_3$   $c=cM_3$   $c=cM_3$   $c=cM_3$   $c=cM_3$   $c=cM_3$ 

$$\text{CM}_{3} \text{CM}_{2} \text{CM}_{2} \text{CM}_{2} \text{CM}_{2} - \text{C} \equiv \text{C} - \text{CM}_{3} + \text{Li}$$

$$\text{Li}^{\dagger} + e^{-}$$

$$\text{CM}_{3} \text{CM}_{2} \text{CM}_{2} \text{CM}_{2} \text{CM}_{2} - \text{C} = \tilde{\text{C}} - \text{CM}_{3} + \text{M} - \tilde{\text{M}} + 2$$

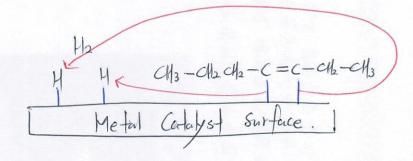
$$\rightarrow$$
  $c_{13}$   $c_{12}$   $c_{13}$   $c_{13}$ 

$$\Rightarrow \frac{\text{cy}_3 \text{cy}_2 \text{cy}_2 \text{cy}_2 \text{cy}_2}{\text{cy}_3} = \frac{\text{cy}_3}{\text{cy}_3} + \frac{\text{cy}_4}{\text{cy}_3}$$

Problem9-8-2.

(b) C/13 C/12 C/16 -C = C - C/12 -C/18

Lindlat Cat. H



 $CH_{3}CH_{2}CH_{3}C$   $CH_{3}CH_{3}CH_{5}CH_{5}C$   $CH_{2}CH_{3}CH_{3}CH_{5}C$ 

(C) 
$$CH_3$$
  $CH_2$   $CH_1$   $C \equiv CH_1$   $+$   $L_1$ 

$$\rightarrow CH_3 CH_2 CH_2 C = C-H_1 + H-HH_2$$

$$\longrightarrow C \frac{1}{3} \frac{1}{1} \frac{1}{2} - \frac{1}{2} \frac{1}{2} - \frac{1}{2} \frac{1}$$

$$\rightarrow CH_3 CH_2 - CH - C = C - H + H - HH_2$$

$$\rightarrow c_{43} c_{42} c_{43} c_{42} c_{43} c_{42} c_{43} c_{42} c_{44} c_{50} c_{64} c_{64$$

$$CH_{3} CH_{2} - CH - C = C - H$$

150

Another

$$CH_3$$
  $CH_2$   $-CH_3$   $CH_2$   $-CH_3$   $CH_3$   $CH_3$   $-CH_3$   $-$ 

$$\longrightarrow CH_3 CH_3 - CH - C = CH$$

$$\rightarrow CM_3 - CM_2 - CM_2 - C = \tilde{C} M_0 + M - \tilde{M}M_2$$
Acetylide anion.

$$CN_3 - CN_2 - CN_3 - X + H C = C - CN_3$$

Problem 9-10-2.

$$\rightarrow \frac{\alpha_3}{\alpha_3}, \alpha_1 - c \equiv c Na + x - \alpha_0 - \alpha_3.$$

$$\Rightarrow \qquad C = \stackrel{\bigcirc}{C} \stackrel{\bigcirc}{M} \qquad \Rightarrow \qquad C \stackrel{\bigcirc}{M} \stackrel{\bigcirc}{A} \qquad \Rightarrow \qquad C \stackrel{\bigcirc}{M} \stackrel{\bigcirc}{A} \stackrel{\bigcirc}{A} \stackrel{\bigcirc}{M} \stackrel{\bigcirc}{A} \stackrel{\bigcirc}{M} \stackrel{\bigcirc}{A} \stackrel{\widehat{A} \stackrel{\widehat{A}}{A} \stackrel{\widehat{A} \stackrel{\widehat{A}}{A} \stackrel{\widehat{A} \stackrel{\widehat{A}}{A} \stackrel{\widehat{A} \stackrel{\widehat{A}}{A} \stackrel{\widehat{A} \stackrel{\widehat{A$$

Problem 9-11-1

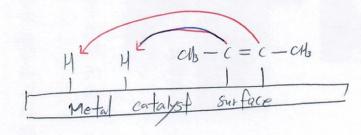
Starting materials. CU3-C=C4. 187-C1/3.

M3-C≡CH + Na MM2

-> CM3-C = CM2. + H-NH2.

137-01/3 + Ma B7.

Lindlar, Ma



C = C C

Cls - 2 - butene.