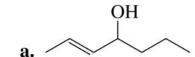
- 1. Draw the skeletal structures for each of the following:
 - a) 2-chloro-3-hexyne

b) 2,4,5-triethyl-1-octyne

c) Cyclobutyne

- 2. Name the following:
 - **d.** $HOCH_2CH_2C \equiv CH$
 - e. CH₃CH=CHCH=CHCH=CH₂

3. Name the following:



4. Why does 1-pentyne have a higher boiling point than 1-pentene?

5. What ketones are formed from the acid-catalyzed hydration of 3-heptyne?

6. Knowing this:

relative stabilities of carbocations



What is the major product of the following reactions?

a.
$$HC \equiv CCH_3 \xrightarrow{\quad \textbf{HBr} \quad}$$

d.
$$HC = CCH_3 \xrightarrow{excess Br_2 \\ CH_2Cl_2}$$

b.
$$HC = CCH_3 \xrightarrow{excess} HBr \rightarrow$$

e.
$$CH_3C \equiv CCH_3 \xrightarrow{\text{excess}} HBr \rightarrow$$

c.
$$CH_3C \equiv CCH_3$$
 $\xrightarrow{Br_2}$ CH_3Cl_3

7. What are the products of the following reactions?

a.
$$\longrightarrow$$
 + H_2 $\xrightarrow{\text{Pd/C}}$

I.
$$= \frac{1. R_2BH/THF}{2. HO^-, H_2O_2, H_2O}$$

b. —
$$\longrightarrow$$
 + H_2 $\xrightarrow{\text{Lindlar catalyst}}$

$$\cdot = \underbrace{\qquad \qquad } \underbrace{\frac{1. R_2BH/THF}{2. HO^-, H_2O_2, H_2O}}$$