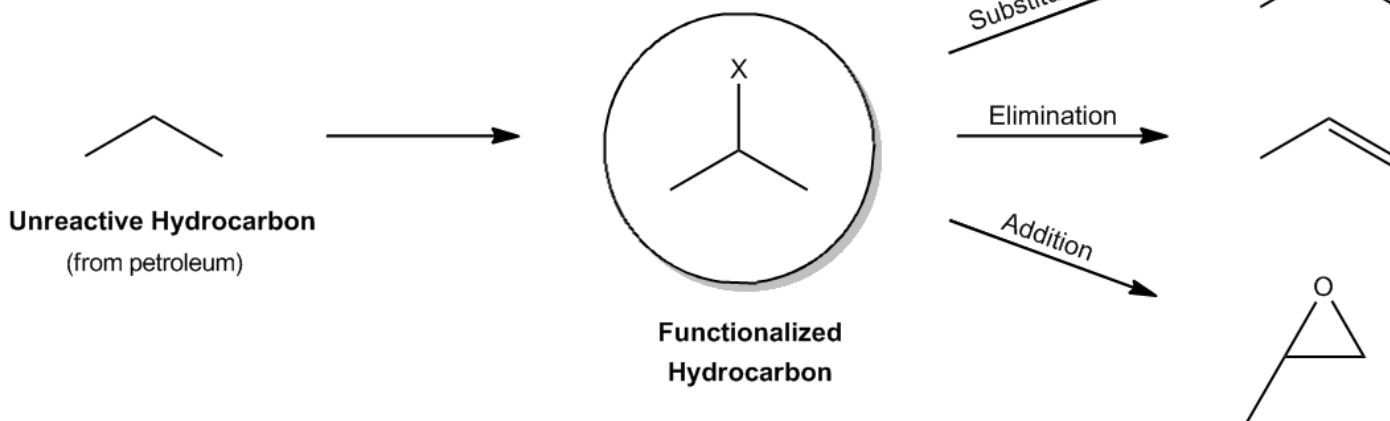


**CLUTCH**

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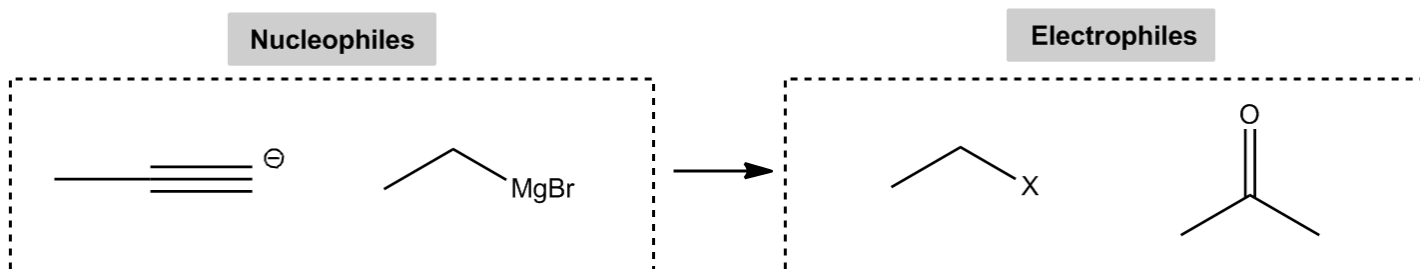
**CONCEPT: SYNTHETIC CHEATSHEET**

1. Alkane Halogenation



2. Organometal Alkylation

- The ONLY way to create carbon-carbon bonds in Organic Chemistry 1



3. Alternating Elimination/Addition to Move Functionality

- $\pi$ -bond = Start with **addition**

- RX/ROH = Start with **elimination**

	Addition		Elimination	
	Markovnikov		Zaitsev	
More Substituted	ROH	RX		
Less Substituted	Anti-Markovnikov		Hofmann	
	ROH	RX		

↩

**CONCEPT: MOVING FUNCTIONALITY**

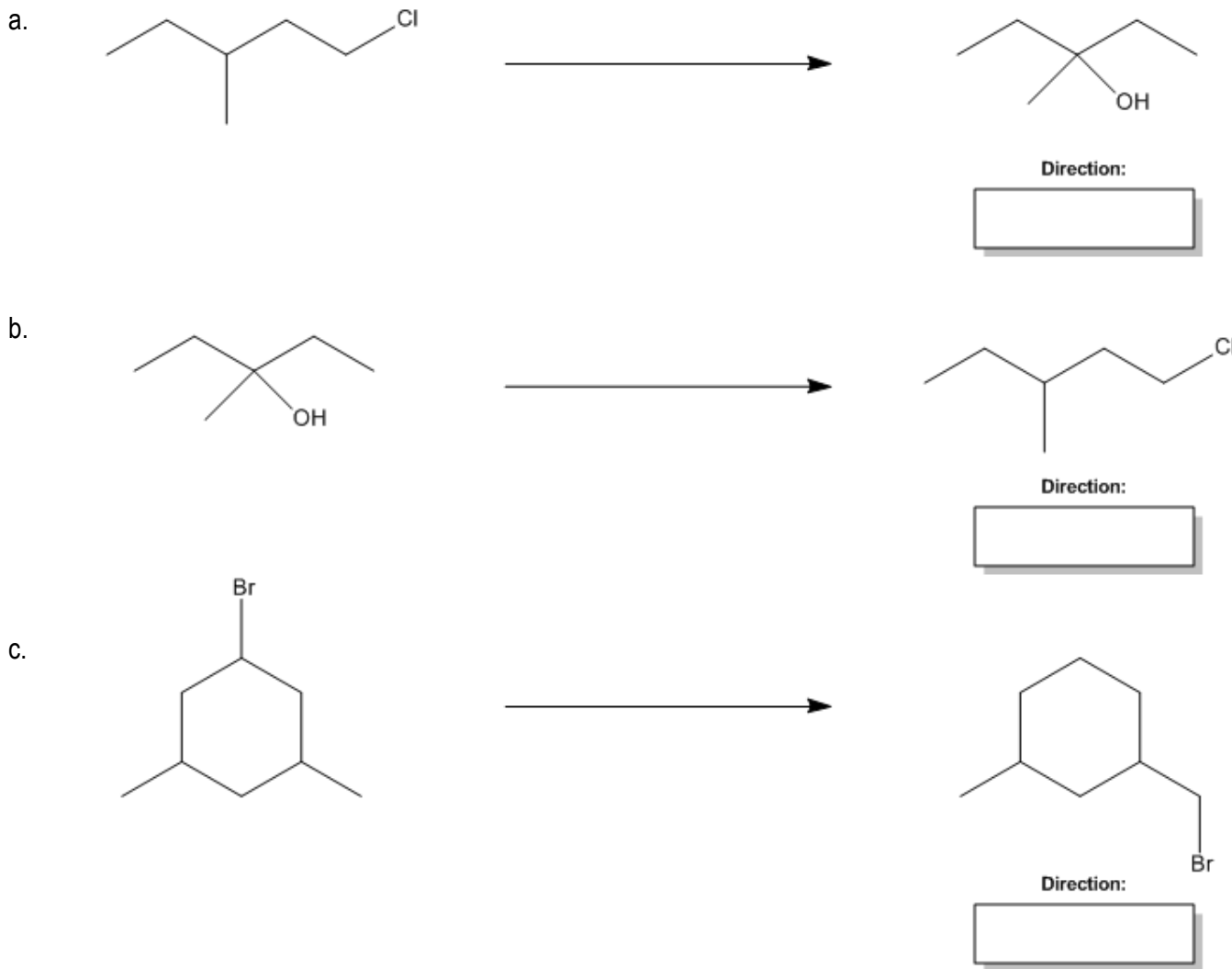
□ We alternate addition and elimination reactions to move functionality (non-alkane groups) along a molecule.

•  $\pi$ -bond = Start with **addition**

• RX/ROH = Start with **elimination**

		Addition		Elimination	
		Markovnikov		Zaitsev	
More Substituted		ROH	RX		
Less Substituted		Anti-Markovnikov		Hofmann	
		ROH	RX		

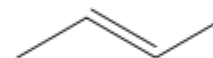
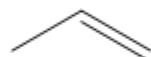
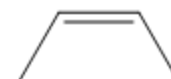
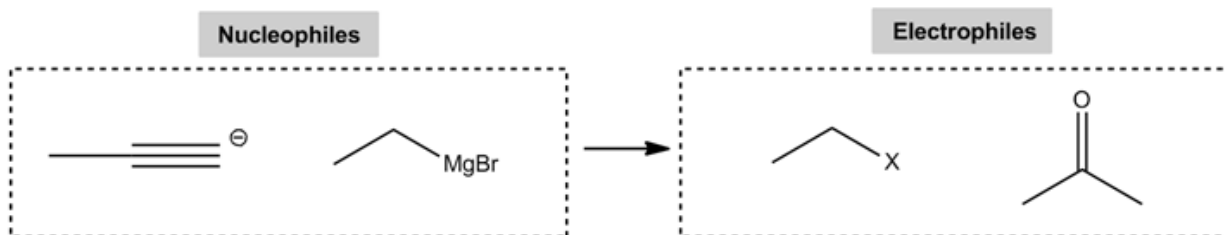
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CONCEPT: SODIUM ALKYNIDE ALKYLATION

□ The ONLY way to create new carbon-carbon bonds in **ORGO 1** is through use of organometals.

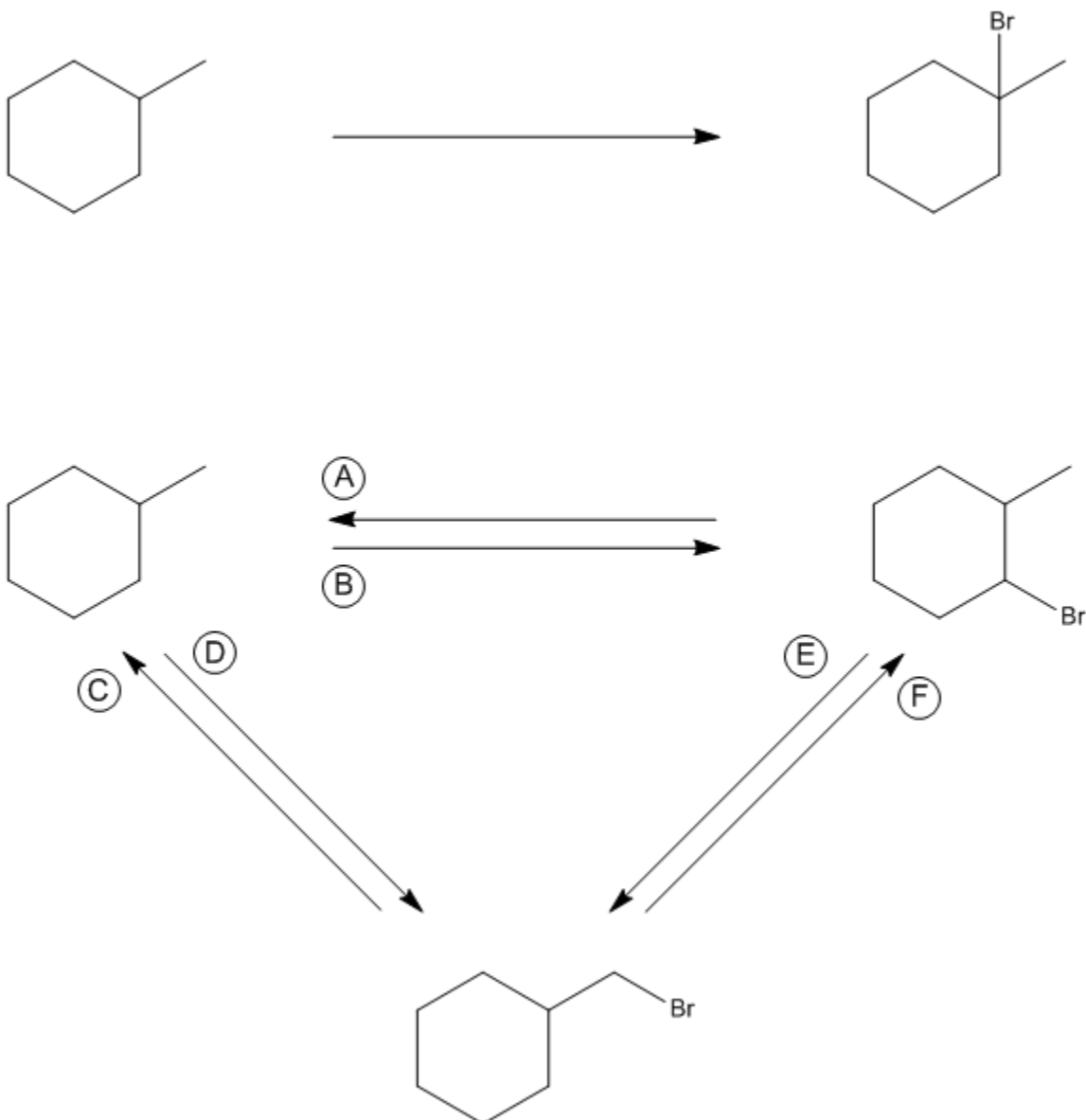
- Sodium alkynides are strong \_\_\_\_\_, often reacted with alkyl halides, strong \_\_\_\_\_
- We must know *how to generate the alkynide*, and *how to transform* the triple bond after reaction.



CONCEPT: ALKANE HALOGENATION

□ The ONLY way to functionalize alkanes is through radical halogenation.

- Radical chlorination may only be used to functionalize alkanes with a single type of \_\_\_\_\_



**PRACTICE:** Supply the reagents necessary to accomplish the following transformation.



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