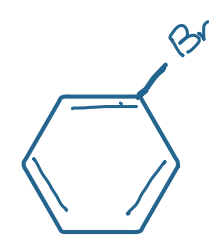
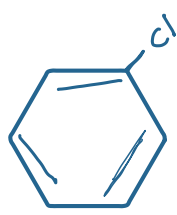
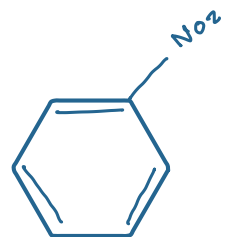
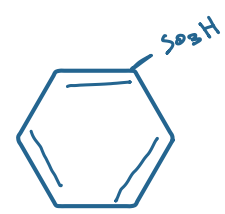
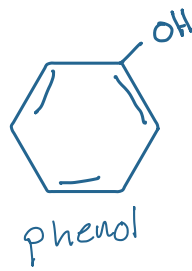
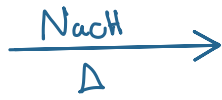
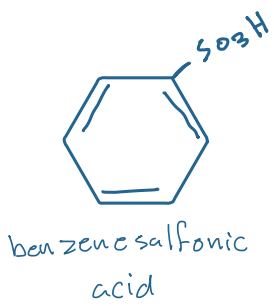


type	Base	electrophile	reaction product
Bromination	$FeBr_3^-$	Br^+	 bromobenzene
Chlorination	$AlCl_3^-$ $FeCl_4^-$	Cl^+	 chlorobenzene
Nitration ion $\overset{+}{N}O_2$ shape: linear	H_2O	nitronium ion NO_2^+ $HNO_3 + H_2SO_4$ $\rightarrow \overset{+}{N}O_2 + H_2O$	 nitrobenzen
sulfonation Δ يحتاج ←	H_2O	$\overset{+}{S}O_3H$	 benzenesulfonic acid

making sulfuric acid = $H_2SO_4 \rightarrow SO_3$ 7% air

→ يمكن إنتاجه أو يشتق:

H_2SO_4, SO_3, Δ



type

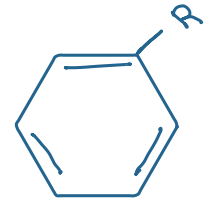
Base

electrophile

Friedel-Crafts alkylation

AlCl_3

R^+
 (carbocation)



التصنيف بالمتان على R

Friedel-Crafts acylation

acyl chloride
 \hookrightarrow Lewis base
 + H_2O

Acylium ion

