5. (12 pts) Preparation of alcohols by Grignard reagents reacted with C=O compounds is very important.
(a) If the Grignard reagent were phenyl Grignard, PhMgBr, draw the C=O compound would be the best one to use in order to make the following alcohols. If it doesn't work, write NR.
(b) If the Grignard were, ethyl Grignard, EtMgBr, draw the C=O compound would be the best one to use in order to make the following alcohols. If it doesn't work, write NR.

a = Carboxyl compound to use with Phenyl Grignard
b = Carboxyl compound to use with Ethyl Grignard

8. (18 pts) Provide the major organic products for the following reactions. If no reaction occurs, write NR. Do 6 out of 8. Cross out the one you don't want graded or graded in order.

(a)\[\text{C}_6\text{H}_5 + \text{H}_2\text{C} - \text{CH}_3\text{Cl} \xrightarrow{\text{AlCl}_3} \]

(b)\[\text{C}_6\text{H}_5\text{Cl} \xrightarrow{\text{NaOH (aq), 350°C, high P}} \]

(c)\[\text{C}_6\text{H}_5\text{C} = \text{NH} \xrightarrow{\text{H}_2\text{SO}_4} \]

(d)\[\text{H}_2\text{C} - \text{CH}_2 - \text{OH} \xrightarrow{\text{CrO}_3, \text{H}_2\text{SO}_4 (excess)} \]

(e)\[\text{H}_2\text{C} - \text{CH}_2\text{OH} \xrightarrow{\text{PCC (excess)}} \]

(f)\[\text{H}_2\text{C} - \text{CH}_2\text{CO}_{\text{CH}_3} \xrightarrow{1. \text{NaBH}_4, 2. \text{acid workup}} \]

(g)\[\text{H}_2\text{C} - \text{CH}_2\text{CO}_{\text{CH}_3} \xrightarrow{1. \text{LAH, 2. acid workup}} \]