Chem 342 Jasperse Due: Tuesday, June 21

Quiz #1

Grignard Chemistry Name: Class # (Copy for Future Reference!):

1. Draw the major product for the following reactions involving Grignard reagents.

a.
$$\frac{1. \text{MgBr}}{2. \text{H}_3\text{O}^+}$$

d.
$$\frac{1.}{2. \text{ H}_3\text{O}^+}$$

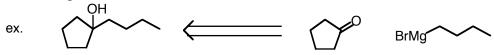
f. 2 Br
$$\frac{1. 2 \text{ Mg}}{2. \text{ CH}_3 \text{CO}_2 \text{CH}_3}$$

3. $\text{H}_3 \text{O}^+$

g.
$$\begin{array}{c} \text{Br} & \text{1. Mg} \\ \hline \text{2. CH}_2\text{O} \\ \hline \\ \text{3. H}_3\text{O}^+ \\ \end{array}$$

Name:

For each of the following, draw a Grignard reagent and a carbonyl compound (formaldehyde, an aldehyde, a ketone, or an ester) from which the alcohol shown would be produced, following acid workup.



There are two possible combinations for this one. Draw both possible combinations of carbonyl compound and Grignard.

Combo Two

There are three possible combinations for this one. Draw all possible combinations of carbonyl compound and Grignard.

Combo Two

Combo Three

Makes this one using an ester as your carbonyl compound.

(there are two solutions, but give at least one)

2. Draw the mechanisms for the following Grignard reactions.

a.
$$\begin{array}{c} O \\ H \end{array} \begin{array}{c} 1. \text{ CH}_3\text{MgBr} \\ \hline 2. \text{ H}_3\text{O}^+ \end{array}$$

b.
$$OCH_3$$
 $1. CH_3MgBr (excess)$ OH