Organic Chemistry II Jasperse Quiz #1 Grignard Chemistry

Due: Submit by Test 1. Can print, hand-write answers, scan or take cell-phone pictures, and email in.

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

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

b.
$$\frac{O}{H} = \frac{1. \text{ Ph} MgBr}{2. \text{ H}_3\text{O}^+}$$

c.
$$H_3CO$$

$$\begin{array}{ccc}
 & 1. & CH_3CH_2MgBr \text{ (excess)} \\
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d.
$$MgBr$$
 $\frac{1.}{2. H_3O^+}$

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

2. 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

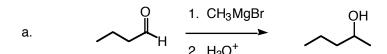
There are three possible combinations for this one. Draw all possible combinations of carbonyl compound and Grignard.

Combo Two

Combo Three

Makes this one using an ester as your carbonyl compound.

3. Draw the mechanisms for the following Grignard reactions.



b.
$$\frac{O}{OCH_3} = \frac{1. CH_3MgBr (excess)}{2. H_3O^+}$$