## "Free Style" problem sets for O-Chem 2

Reactions: Draw the structure of the products of the following reactions. Include any stereo or regiochemistry, if necessary.

A


B
 $\xrightarrow[\text { 2) } \mathrm{H}_{3} \mathrm{O}^{+}]{\text {1) } \mathrm{LiAlH}_{4}}$

C


D

$\square$

E

$\square$

F

$\square$
2) Texas two-step: Provide both the reagents (in square boxes) and the intermediate product (rounded box) for these synthesis. In some of the steps, there is more than one correct method. (Note, that a second reagent may be required in the square boxes. For example, the acid step of a Grignard addition-please include it.)

A



B



C


3) Reactions: Draw the structure of the products of the following reactions. Include any stereo or regiochemistry, if necessary.
A)


B)

C)


$$
\xrightarrow[\substack{\text { 3) } \mathrm{SOCl}_{2} \\ \text { 4) } \mathrm{HN}\left(\mathrm{CH}_{3}\right)_{2}}]{\substack{\text { 1) } \mathrm{Mg} \\ \text { 2) } \mathrm{CO}_{2}}}
$$


D)

2.5 eq. $\mathrm{CH}_{3} \mathrm{CH}_{2} \mathrm{CH}_{2} \mathrm{OH}$
Heat

