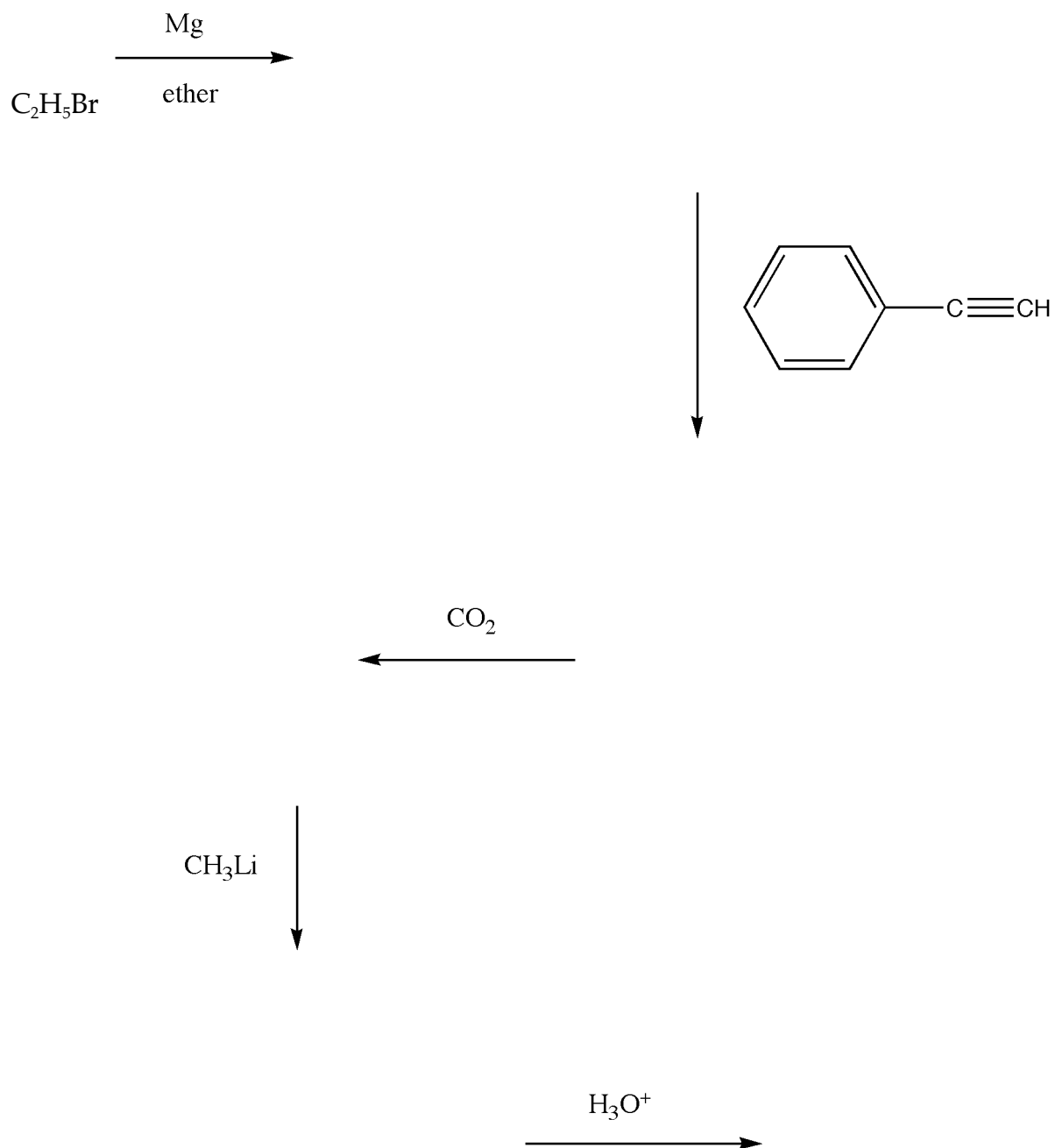
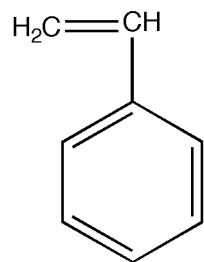


Exercise 8: Let's make polystyrene and other aromatic issues

1. As a review:



Many polymers are made through a radical polymerization mechanism. Styrene is the monomer of polystyrene, and has the following structure:



Assume this mechanism needs a radical initiator, such as a peroxide of the form
RO—OR

2. Write the initiation step of the peroxide homolytically cleaving.

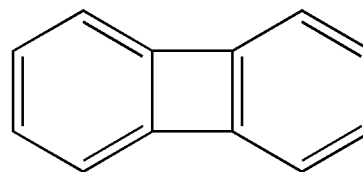
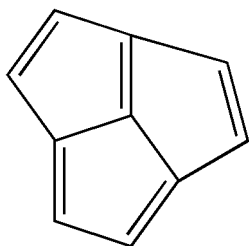
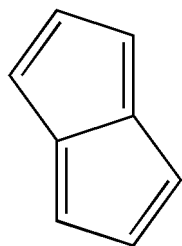
3. Write the initiation step of the radical adding to the styrene and forming a radical.

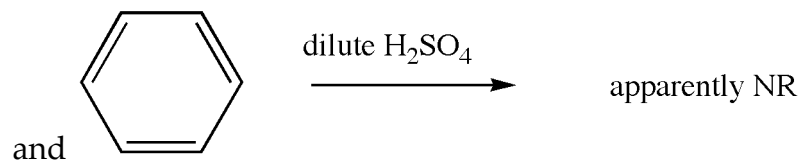
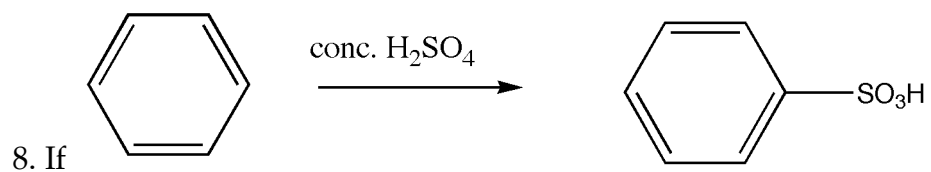
4. Write the propagation step of the radical created in step 3 reacting with another styrene and forming another radical.

5. Write another propagation step of the radical created in step 4 reacting with another styrene and forming another radical.

6. Write a termination step in which the radical created in step 5 meets the radical created in step 4.

7. Decide if the following molecules are aromatic, anti-aromatic or simply not aromatic.





then, using those pieces of information, supply the missing reactant in the following reaction:

