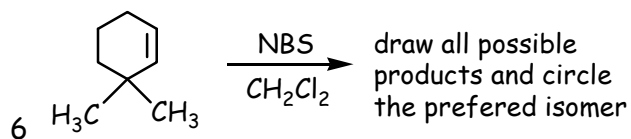
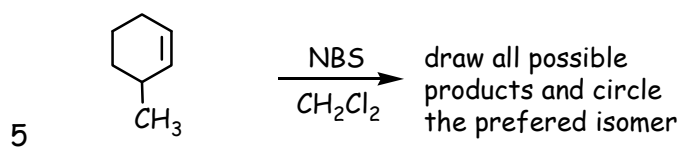
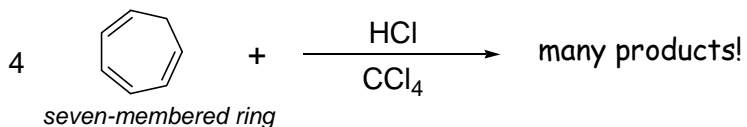
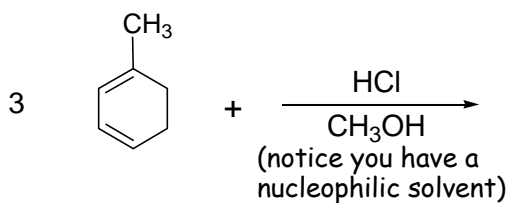
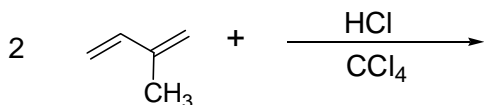
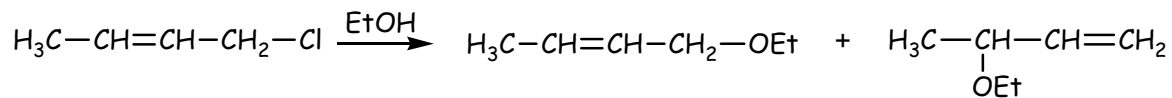


NAME \_\_\_\_\_

Draw all of the possible product isomers for each reaction.



7. Draw a mechanism to account for this reaction:



8. When  $\text{Br}_2$  is added to 1,3-butadiene at  $-15^\circ\text{C}$  the product is a mixture of 60% product **A** and 40% product **B**. When the reaction is done at  $60^\circ\text{C}$ , the product ratio is 10% **A** and 90% **B**.

a. Draw a mechanism to account for both products and label products correctly as **A** and **B**.

b. Draw a reaction coordinate diagram for your mechanism: label starting material; **A** and **B**; intermediate(s); and transition state(s).