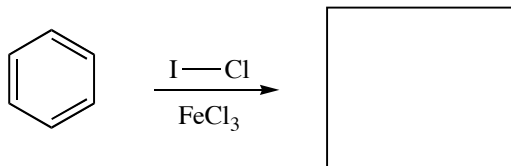


**In-Class problem 1** (from MT1, spring 2018):

Follow the steps to help you predict the correct product for the following electrophilic aromatic substitution reaction.



- On the I—Cl structure above, draw  $\delta^+$  and  $\delta^-$  charges for each atom.
- Which halogen will attack FeBr<sub>3</sub>, I or Cl, to make the electrophile? Give a one-sentence explanation for your choice.
- Draw the structure of the electrophile formed when ICl attacks FeBr<sub>3</sub> in the box below:
- Now show benzene attacking this electrophile. Clearly show any charges, lone pairs and curvy arrows. Be sure to show all resonance structures for the carbocation intermediate.
- Finish the mechanism and draw the final product in the box above.