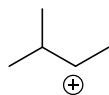
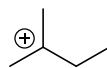
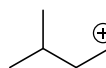


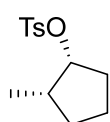
Name: _____

1. Which of the following carbocations is the **most stable**. (1 point)

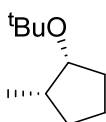
- a. **I**
b. **II**
c. **III**

**I****II****III**

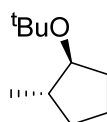
2. Circle the major product for the following reaction. (1 point)


 $\xrightarrow{\text{KO}^t\text{Bu}}$

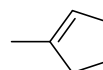
a.



b.



c.

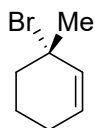
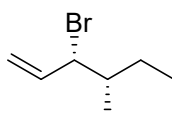
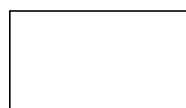


d.

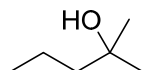


3. a. Predict the mechanism(s) for following reactions.

- b. Provide the expected major product(s). If there is one than one possible mechanism, draw the expected **major** product for **each** mechanism. (4 points)

Mechanism(s):
 $\xrightarrow{\text{NaOH}}$

 $\xrightarrow{\text{NaSMe}}$

4. Provide mechanism for the following reaction. (4 points)


 $\xrightarrow{\text{conc. H}_2\text{SO}_4}$

heat

