**WS: Alkene Reaction Practice** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_

Complete the following table by writing reactions with the given reactants.

* Include reactants, products and, if applicable, catalysts.
* If appropriate, show whether the *cis* or *trans* form of the product is produced.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Reactant**  **1** | **Reactant 2** | **Equation using the 2 given reactants** |
|  | 2,3-dimethyl 2-butene | Chlorine |  |
|  | 3-methyl-1-pentene | Bromine |  |
|  | 3-methyl-1-pentene | Water |  |
|  | 3-ethyl-3-hexene | HI |  |
|  | 2-pentene | HI |  |
|  | 1-bromo-2-ethyl-cyclobutane | Hydrogen |  |
|  | 2,5-dimethyl-2-heptene | KMnO4 |  |
|  | 2,5-dimethyl-2-heptene | Ozone |  |
|  | 3-bromo-cyclopentane | Ozone |  |
|  | 2,4-hexadiene | Iodine –  1 mole |  |
|  | 2,4-hexadiene | Iodine –  2 moles |  |

1. Using Reaction #4 above with 3-ethyl-3-hexene and HI:
   1. Draw the **two carbocations** that **potentially** could be formed as an intermediary.
   2. Label the carbocations as primary, secondary or tertiary.
   3. Circle the carbocation that is most stable.
   4. Explain why the one circled is the most stable.

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1. Draw the other carbocation that resonates with CH3CHBrCHCH=CH2