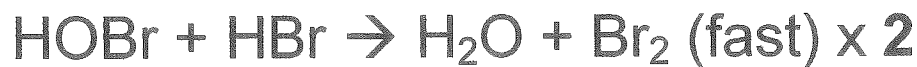


Reaction Mechanisms

- A reaction mechanism is a step-by-step process that reactant molecules undergo to produce the eventual products.
- Any reaction that has more than 2 reactant molecules will have a reaction mechanism involving more than one step.
- This is because the probability of several molecules colliding simultaneously with sufficient energy and proper geometry to overcome the activation energy is infinitesimally small.
- Instead, we set up a series of steps, each involving only two molecules.





write on
OH

.rxn intermediate
defn

Example - Finding a missing step

Multi-step Reactions

- 1) Each step in the reaction has its own peak on the potential energy diagram.
- 2) The higher the peak is from the original energy of the reactants, the slower that step is.
- 3) The activation energy for the overall reaction is that for the highest peak.
- 4) The slowest step is called the **RATE DETERMINING STEP**.
- 5) ΔH is the difference between the initial reactants and the final products.

