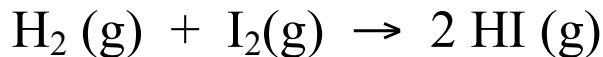


## KINETICS ½ SHEET (turn in with PS # 24)



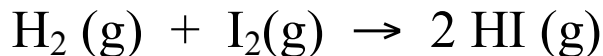
1) For the exothermic reaction represented above, carried out at 298K, the rate law is as follows:

$$\text{Rate} = k[\text{H}_2][\text{I}_2]$$

Predict the effect of each of the following changes on the initial rate of the reaction and explain your prediction in terms of collision theory.

- A) Addition of hydrogen gas at constant temperature and volume.
- B) Increase in volume of the reaction vessel at constant temperature.
- C) Addition of a catalyst. In your explanation, include a diagram of potential energy versus reaction coordinate.
- D) Increase in temperature. In your explanation, include a diagram showing the number of molecules as a function of energy.

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