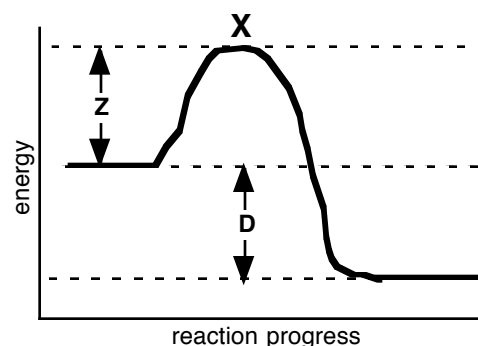


+ WS 9.4 Review Sheet - Kinetics and Equilibrium

1. Use the diagram at right to answer these questions:

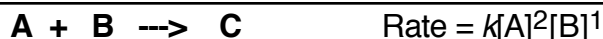
- Is this reaction endothermic or exothermic?
- Which is higher in energy; the reactants or products?
- What is point "X" called? _____
- What does line "Z" represent? _____
- What does line "D" represent? _____



2. For the following, indicate the most likely result in reaction rate: speed up or slow down

- increasing temperature: _____
- adding water to reactants: _____
- using higher concentration of reactants: _____
- crushing the reactants into a powder: _____

3.



- Which will affect the reaction rate more; doubling [A] or doubling [B]? _____
- What is the overall order of this reaction? _____

4.



	initial [C] (mol/L)	initial [D] (mol/L)	initial rate (mol/L · s)
experiment 1	0.025	0.020	1.2×10^{-6}
experiment 2	0.050	0.020	2.4×10^{-6}
experiment 3	0.025	0.040	2.4×10^{-6}

- the reaction order with respect to [C]? _____ with respect to [D]? _____ overall? _____
- What is the value of the rate law constant?

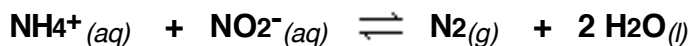
5.



- Write the expression for K_{eq} for the above :

- Name 5 ways to increase [J]:

6.



At 400 K, the 1.0 L reaction vessel is found to contain 1.55 mol NH_4^+ , 0.912 mol NO_2^- , and 3.20 mol H_2O . Given the equilibrium constant = 39.5, calculate the concentration of the N_2 .