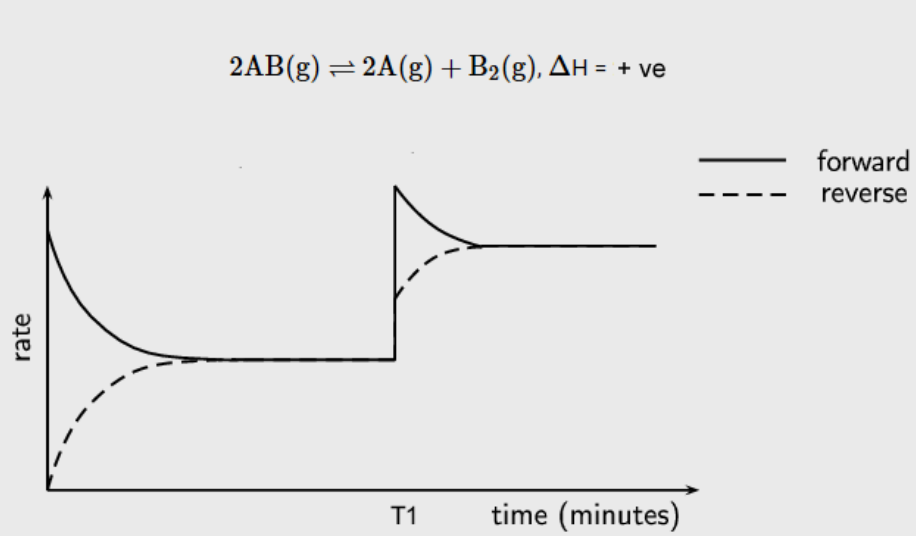
Friday Worksheet **Name: ……..**

Rates of reaction worksheet 1

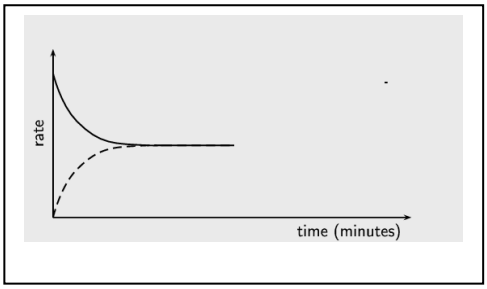
1) Consider the graph below of the reaction
   2AB(g) <=> 2A(g) + B_2(g)
   A disturbance to the equilibrium takes place at T1.



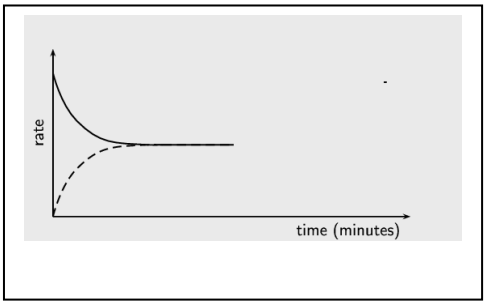
a) Are both the forward and backward reactions increased the same at T1?

b) Explain what may have happened at T1 from the possible scenarios listed below. Provide an explanation for each. Draw what the graph would look like if each of the following changes occurred.

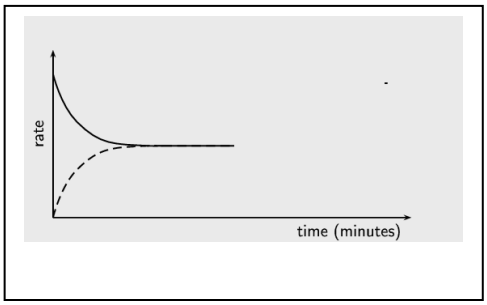
A catalyst is added at T1? Explain.



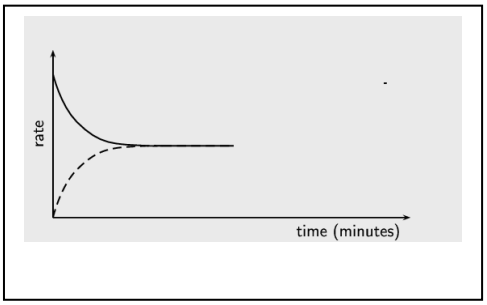
The concentration of a reactant is increased? Explain.



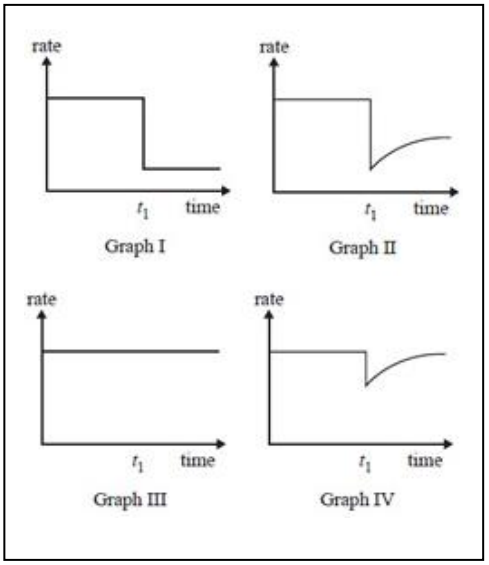
Temperature is increased



Temperature is decreased.



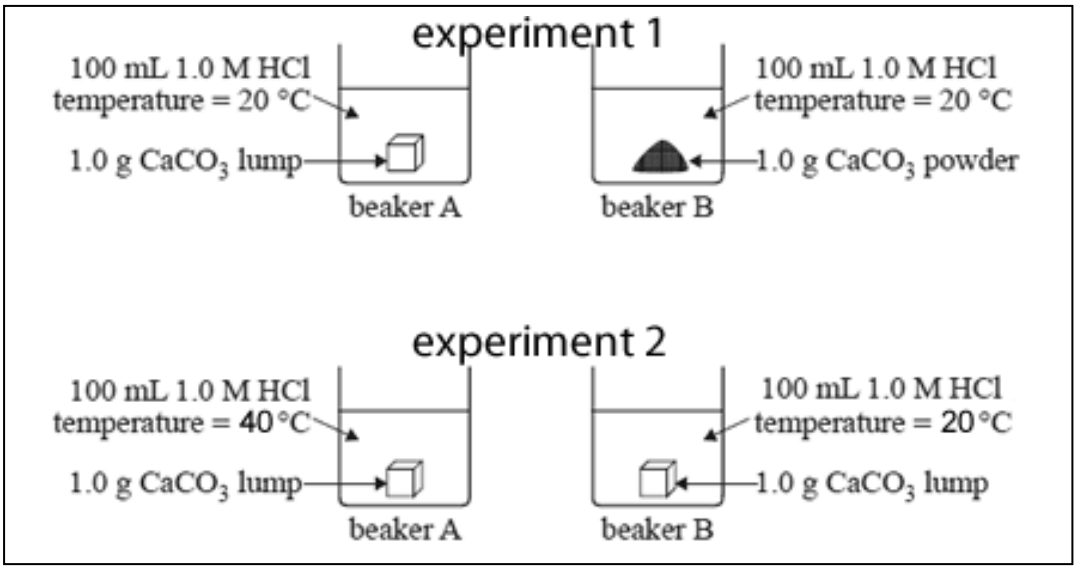
2) Reactants A and B are placed in a sealed container with a suitable catalyst where they react according to the equation
A(g) + B(g) => C(g)
After the reaction reaches equilibrium, a small amount of a compound is added to the container at time t1.
The compound 'poisons' the catalyst and stops it working.



a) Which one of the graphs best represents the rate of the forward reaction versus time?

b) Which graph is consistent with a temperature increase after the catalyst is poisoned?

3) Two experiments, were set up as shown below to investigate factors that influence the rate of a reaction.



a) What are the dependent and independent variables in:

Experiment 1
- dependent
- independent

Experiment 2
- dependent
- independent

b) Explain using the collision theory how the rate of the reaction in experiment 2 differs from beaker A and B.