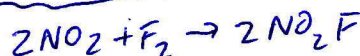
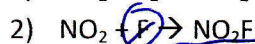
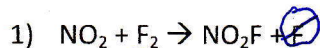


Kinetics review question... drawing reaction diagrams.

Consider the following two step reaction



F is produced and then consumed, so intermediate nothing is consumed then reproduced so no catalyst

*** note, the following numbers are totally made up to help you practice drawing the diagrams. Although the diagram does look like this.***

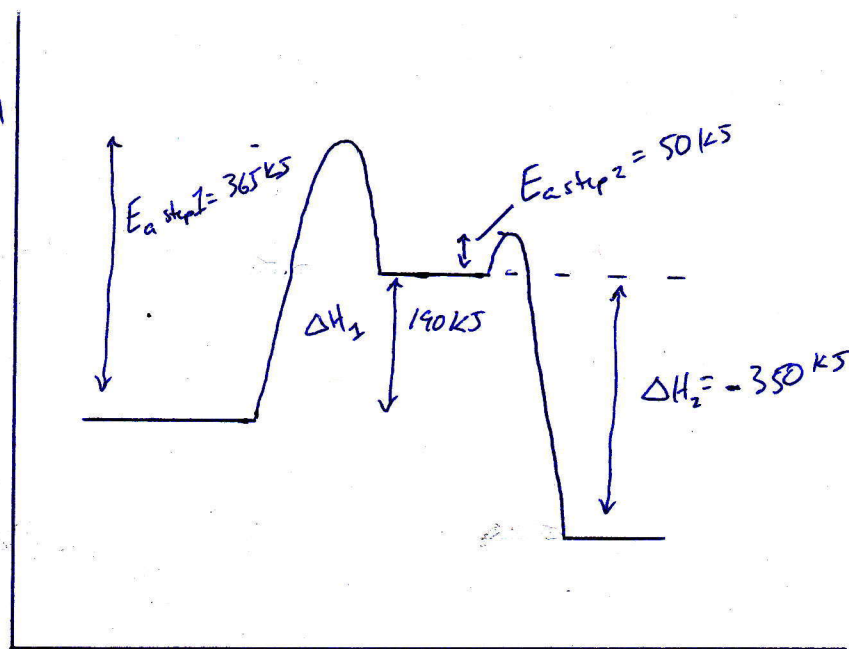
If the E_a of step 1 is $365 \frac{\text{kJ}}{\text{mol}}$ with a ΔH of 190 KJ and the E_a of step 2 is $50 \frac{\text{kJ}}{\text{mol}}$ and the ΔH of the second step is $-350 \frac{\text{kJ}}{\text{mol}}$:

- a) Draw a fully labeled reaction diagram the diagram with
- Activation energies for step 1 and 2
 - ΔH for both steps
 - Identify each step as endo or exothermic
 - Which step is the rate determining step and why?
 - What is the reaction intermediate? How do you know?
 - Is there a catalyst? How do you know?

Step 1 endo (ΔH is "+")
Step 2 exo (ΔH is "-")

*Because E_a of Step 1 is larger, it is more difficult & slower.
 \therefore Step 1 = rate determining step.*

Energy \uparrow



Rxn proceeds