AP Chemistry

Thou Shalt Not Forget Questions

**Ch. 14 Kinetics**

1. What are the 3 characteristics that an effective collision must have?
2. Write the rate law for the following reaction...assume it is an elementary step: 2N2(g) + 3H2(g) 🡪 2NH3(g)
3. What is the unit for the rate constant (k) for 1st order/ 2nd order/ 3rd order?
4. a) If [A] vs. time / ln[A] vs. time / 1/[A] vs. time is linear, then the reaction has what order?

b) What is graphed on the x and y axis to make a linear plot in order to determine if a reaction is 1st order/ 2nd order?

1. a) List 3 “completely different” ways to speed up a reaction.

b) How does a catalyst speed up a reaction?

1. What order of reaction has a half-life that does not change regardless of the initial concentration?
2. Radioactive decay is what order?
3. If a “reaction profile” has a taller/shorter ‘hill’ (or activation energy) then the reaction is slower or faster?
4. Which step of a reaction mechanism determines the rate: the slow step or the fast step?
5. \_\_\_\_\_\_\_\_\_\_\_ are produced in one step and used up in a later step.
6. \_\_\_\_\_\_\_\_\_\_\_ are used up in one step, and produced in a later step.