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: $2N_{2(g)} + 3H_{2(g)} \rightarrow 2NH_{3(g)}$
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?
5. a) List 3 "completely different" ways to speed up a reaction.

   b) How does a catalyst speed up a reaction?
6. What order of reaction has a half-life that does not change regardless of the initial concentration?
7. Radioactive decay is what order?
8. If a "reaction profile" has a taller/shorter 'hill' (or activation energy) then the reaction is slower or faster?
9. Which step of a reaction mechanism determines the rate: the slow step or the fast step?
10. _____ are produced in one step and used up in a later step.
11. _____ are used up in one step, and produced in a later step.