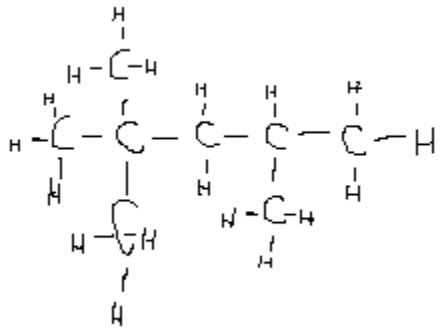
Review Packet Answer Key

Kinetics & Equilibrium (Topic 8 in your review book)

1. 3
2. 4
3. 2
4. 3
5. 2
6. 3
7. 4
8. 1
9. 3
10. 4
11. 3

12. As molecules increase in temperature, they move faster and collide harder. As a result, more of them will break each other's bonds and go on to react.
13. The rates must be **equal**.
14. Adding more $HC_2H_3O_2$ will cause the equilibrium reaction to "shift right" and in so doing, produce more H^+ ions, so the **concentration of H^+ increases**
15. This one is given to you on Table R!
16. One source of the activation energy would be the hard contact between the two ceramic balls.
17. The fact that the "571.6 kJ" value is located on the products side.
18. The system coverts reactants that are all in the gas phase to one product in the liquid phase. SO the entropy decreases because:
    - **The product particles are in a less energetic phase, OR**
    - **There are fewer product particles than reactant particles**
19. Adding Cl_2 causes the reaction to "shift to the right" meaning the reaction speeds up in the forward direction, producing more OCl^- ion.
20. 

21. In the vapor phase, the molecules of octane are no longer in contact with each other, so they have a less orderly arrangement, whereas in the liquid state, the intermolecular forces between molecules still exists and causes the molecules to be in a more orderly arrangement.