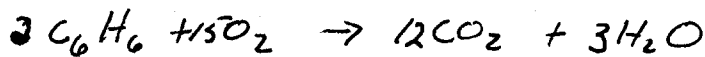
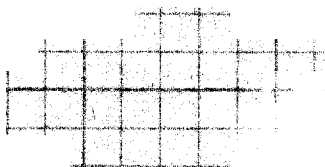


- ① Writedown the relation between the chemical potentials of the species in the following reaction at equilibrium



- ② sketch a free energy diagram for a reaction that is product favored



- ③ ~~AG~~ How did ΔG change for the formation of your amino acid in going from the 18° sea water to the 100° Hydrothermal vent region? Some ΔG 's were negative at the hydrothermal vent conditions. What is the "big picture" significance of that?

- ④ what equations are on your refrigerator?

