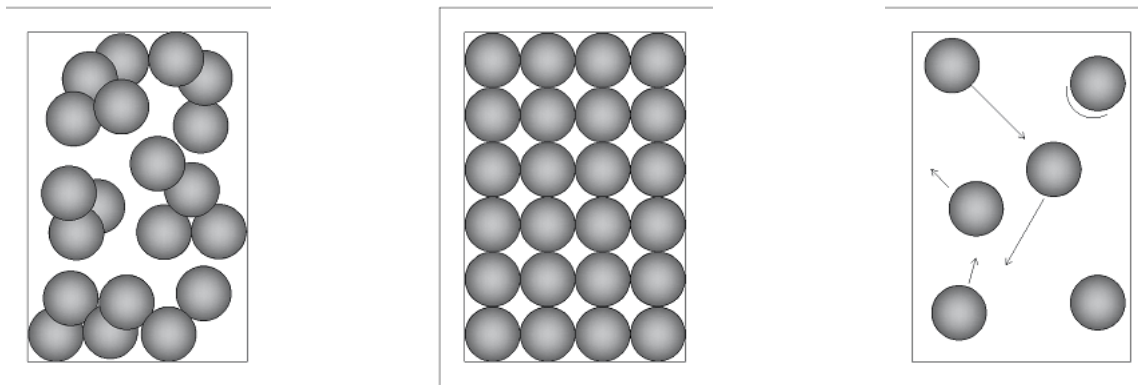


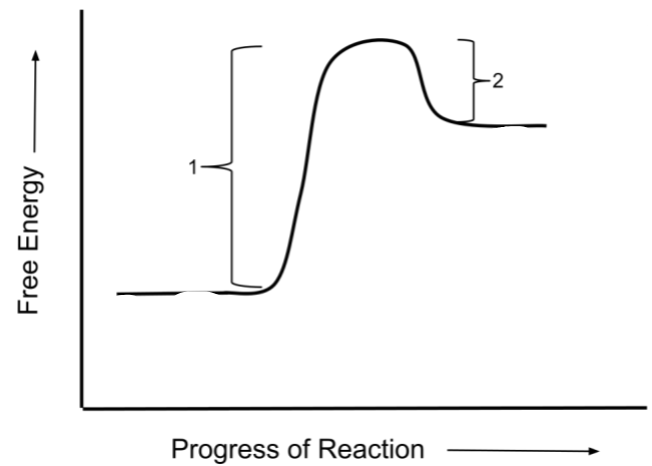
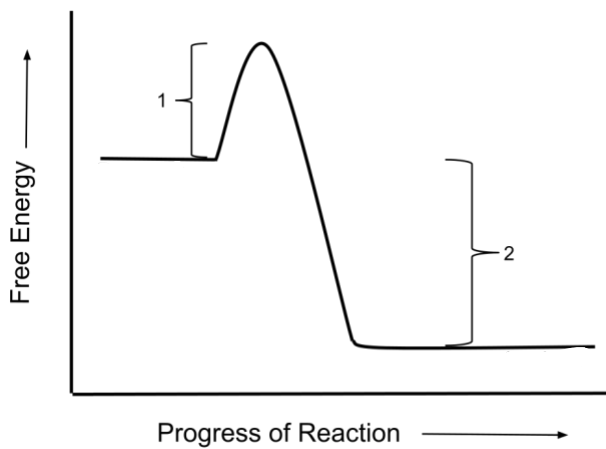
LIFE 1010-01 SI #6

- 1) Osteoclasts are bone cells that degrade bone while osteoblasts aid in forming new bone. Determine whether each bone cell uses anabolic or catabolic pathways.
- 2) Describe the first law of thermodynamics and state how we see it in chemical reactions.
- 3) First describe what entropy is. Then, order the pictures below from highest entropy to lowest.



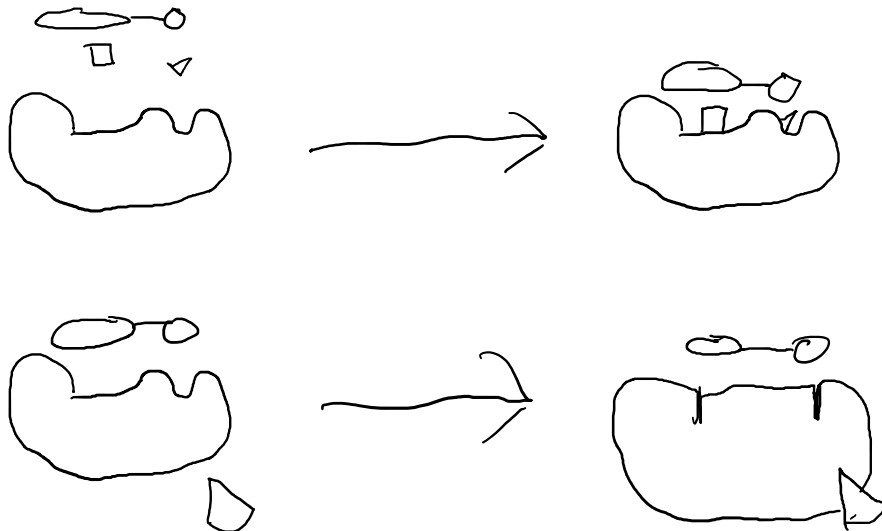
- 4) How do we store energy biologically?

- 5) Below are two reactions. Label each part of the graph (ΔG , E_a , Reactants, and products) and determine whether each reaction is endergonic or exergonic.

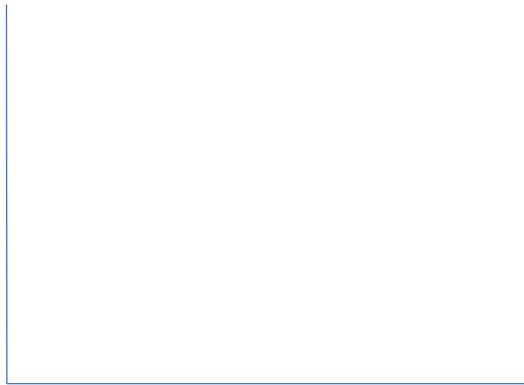


- 6) In the reactions above, what could we possibly add to increase the rate of reaction?

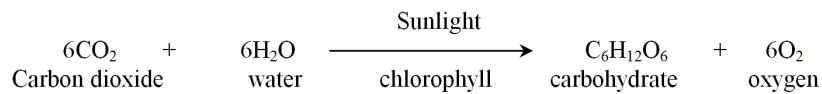
- 7) Observe the diagrams below and label each part of the diagrams and determine what type of inhibition is taking place.



- 8) An endergonic reaction has a delta G of 25. Draw an exergonic reaction graph that can be coupled with this reaction that will allow for this reaction to occur.



- 9) In each reaction below, determine what is reduced and what is oxidized.



- 10) What macromolecule are enzymes classified as?

Medical Matters

You are treating a patient who is infected with MRSA. After doing a blood test, you notice that his white blood cell count is off the charts. Discuss with your group why this might be and what function of white blood cells we have discussed in class helps fight infection. (HINT: question 3)