Problem Set 14 BB 450 / 550

1. Below are three different genetic diseases affecting glycogen metabolism enzymes. Based on the described phenotype, predict which enzyme is affected:
   - Anderson's Disease - normal amount of glycogen with long unbranched chains
   - Cori's Disease - increased amount of glycogen with numerous short branches
   - McArdle's Disease - limited ability to perform strenuous exercise, but otherwise OK

2. Another genetic disease affecting glycogen metabolism is that which results in an inactive G6Pase. The result of this disease is that the glycogen is found in increased amounts and with normal structure. Explain why this is the case.

3. The body's breakdown of glycogen is regulated by fast and slower regulation schemes. Describe this regulation and how the speed of its action is important physiologically.