log (θ/1−θ)

2

1

0

−1

−2

−3

−7   −6.5   −6   −5.5   −5   −4.5   −4   −3.5

log [F-] (M)
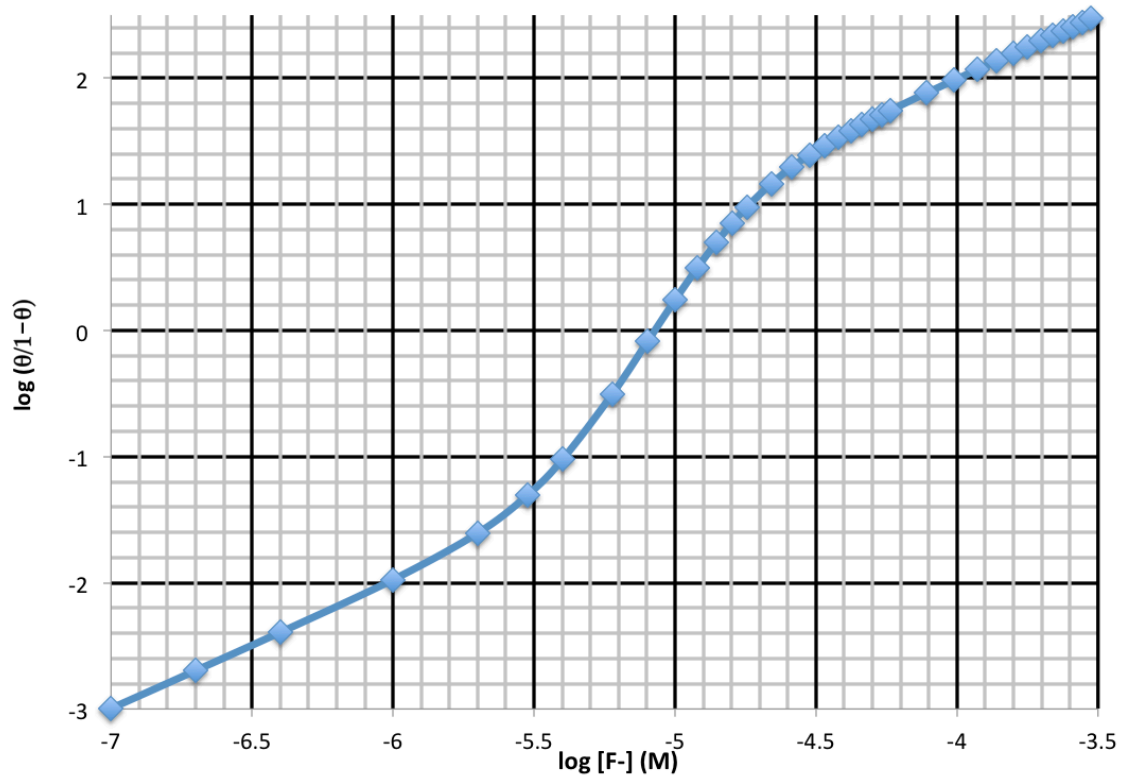
1. Determine the K_D for the tense and relaxed states of the protein from the data above.

2. Describe how enzymes use metal catalysis.

3. Draw a Gibbs free energy (G) diagram for A→B and C→D, where A→B is slower than C→D.

4. The earliest enzymologists (as well as, current ones) were intrigued by experiments which hold the [enzyme] constant, while varying the [substrate]. What is particularly interesting about the initial rate of an enzyme-catalyzed reaction as [substrate] get large?