1. A 69 year old male who is being treated for a gram negative wound infection with gentamicin. He is 5’4” tall and weighs 172 lbs. His SCr is 1.3 mg/dL (8pts).

a) Calculate his gentamicin clearance (1pt).

b) Calculate the volume of distribution (Vd) and elimination half-life (T_{1/2}) (1pts)

c) Calculate the dose and dosing interval if 10 mg/L (clinical peak) and 1 mg/L (clinical trough) of a half-hour infusion treatment are desired (2pts).

d) For Once-a-day strategy (Q24h), calculate the steady state concentration C_{11} (11 hour after the start of infusion) with 7 mg/kg (for dosing weight) gentamicin in a 30-minute-infusion (assume one-compartment as in class) (1pt).

e) Assume C_{11} calculated in d) is the real observation, how should we adjust dosing interval according to ODA nomogram below (1pt).

**ODA Nomogram for Gentamicin and Tobramycin at 7 mg/kg**
2. Discuss why the sampling time is important to monitor aminoglycoside administration. When and why clinical peak and trough levels should be drawn. (2pts)

3. K. T., a 42-year old, 50-kg, non-obese woman with a serum creatinine of 1.5 mg/dL. What is the dosing regimen according to the nomogram below? Following the recommended treatment, what is the expected peak vancomycin concentration for her at steady state (assume i.v. bolus)? (2pts).

![nomogram image]

**Figure 1.** Detroit Receiving Hospital and University Health Center vancomycin dosing nomogram. (Updated 3/99)