1. A drug [sodium S=0.85, with bioavailability F = 0.9] is rapidly absorbed. The therapeutic range is 2-10 ug/ml. It follows one-compartmental pharmacokinetics and has a total body clearance of 3.2 L/hr and a volume of distribution of 48 L. Make a dosing recommendation for chronic use of this drug. You have 250 mg tablets available to dispense.

2. Propranolol, a high-extraction drug, is combined with phenobarbital (which can affect hepatic enzyme activity). What is your expectation for a potential change in AUC of propranolol (show evidence)?

3. An adult patient (70 kg) with a subtherapeutic theophylline (5 µg/mL) is admitted to the ICU. Based on average pharmacokinetics parameters (Vd = 0.5 L/kg, t₁/₂ = 8 h)), calculated an i.v. bolus loading dose and a maintenance dose (i.v. infusion) to increase the level to 15 µg/mL.

4. A drug tablet [S=0.62, with bioavailability F = 0.7] follows one-compartmental pharmacokinetics and has a total body clearance of 2.5 L/hr and a volume of distribution of 50 L. The oral absorption rate constant Ka is 0.4 /hr. Calculate the Tmax, Cmax, AUC if a 250 mg tablet is taken.

5. A 80 kg patient receives 500 mg aminophylline dihydrate (theophylline salt, S=0.8) i.v. by bolus injection every 8 hr. Assume that he has average pharmacokinetics parameters of theophylline (Vd = 0.5 L/kg and t₁/₂ = 8 h). Predict steady state peak and trough concentration.