

Suppose a drug is metabolized and excreted in the body in a manner so that it decays with a half-life of 3 hours. The effective dosage range for this drug has been found to be fairly broad - from 4 mg per kg of body weight to 11 mg per kg of body weight. You have prescribed this drug for a 100 kg patient and specified that a dose is to be given every 4 hours.

- a. What fraction of the drug in the patient's body will decay between each dose?
- b. What periodic dose of the drug must be given in order to ensure that the amount of drug in the patient remains within the effective dosage range and the amount drops just to the lower end of this range at the time of each dose?
- c. What is the loading (bolus) dose to be given to this patient?