

PHA 5127
Homework #1
(Total: 10 points)

#1) Calculate $AUC_{0 \rightarrow \infty}$ from the given concentration-time profile. (3 points)

Time (h)	Plasma concentration (mg/L)
1	94.8
4	80.1
6	70.3
8	59.9
12	40.1

#2) Fractions and amounts of drugs eliminated through zero- and first-order kinetics (2 points)

#2a) How do fraction and amount of a drug eliminated through first-order kinetics change? Please, mark the right answer. (1 point)

- Fraction changes, amount stays constant
- Fraction stays constant, amount changes
- Fraction changes, amount changes
- Fraction stays constant, amount stays constant

#2b). How do fraction and amount of a drug eliminated through zero-order kinetics change? Please, mark the right answer. (1 point)

- Fraction changes, amount stays constant
- Fraction stays constant, amount changes
- Fraction changes, amount changes
- Fraction stays constant, amount stays constant

#3) Please derive the half-life equation for a first-order elimination process. (3 points)

#4) What is the difference in distribution of drugs into organs such as the heart and the lung compared to fat tissue and bone? Explain! (2 points)