

1. A car rental company charges \$40 a day and 15 cents a miles for its cars.
 - (a) Write a formula for the cost $C(d, m)$ of renting a car as a function of the number of days (d) and the number of miles driven (m).
 - (b) Find the value of $C(5, 300)$. What does it mean?
Your answer should be a complete sentence, describing both inputs and outputs.
2. Suppose the concentration ρ (in mg per liter) of a drug in the blood as a function of x , the amount (in mg) of the drug given, and t , the time (in hours) since the injection, is given by

$$\rho(x, t) = te^{-t(5-x)}$$

- (a) Find $\rho(3, 2)$. Give units, and interpret in terms of drug concentration.
Your answer should be a complete sentence, describing both inputs and outputs.
- (b) Explain the significance of the following two single variable functions in terms of drug concentration.

$$\rho(4, t)$$

$$\rho(x, 1)$$

- (c) What values do you think x can take? What about t ?