1.4 - Applied Equation Solving

Name _____. Date _____

Create an equation to model each situation and solve it to find the unknown value.

1. Jamie paid the rent well past the due date for the months of April, May and June. As a result, he had been charged a total of $75 as a late fee. How much did he pay as a late fee per month?
   a. What is the unknown?

   b. Rewrite the problem in words and as an equation.

   c. Solve for the unknown

2. Janelle rides her bike from Novato High to In-N-Out. While on her bike, she travels at 14 miles per hour. The distance between NHS and In-N-Out is 1.9 miles. How long does it take her to get to In-N-Out? (hint: distance = rate * time)
   a. What is the unknown?

   t: time

   b. Rewrite the problem in words and as an equation.

   $1.9 = 14t$

   c. Solve for the unknown

   $t = \frac{1.9}{14}$

   $t = 0.136$ hours → $0.136\,hr \cdot \frac{60\,m}{1\,hr}$

   8.16 minutes

constant

3. Juan sells raffle tickets at a charity event for $6 each. He starts with $20. How many tickets does he have to sell to get to a total of $114?
   a. What is the unknown?

x: number of tickets sold

   b. Rewrite the problem in words and as an equation.

$114 = 6x + 20$

   c. Solve for the unknown

$$\begin{array}{r} 114 = 6x + 20 \\ -20 \quad\quad -20 \\ \hline 94 = 6x \end{array}$$

$$\frac{94}{6} = \frac{6x}{6}$$

$x = 15.66$ tickets $\rightarrow x = 16$ tickets round up

4. The Rock Zoo has 37 species of big cats. Recently, a few species of big cats were moved to other zoos around the country. The zoo now has only 25 species. How many species of big cats went to other zoos?
   a. What is the unknown?

   b. Rewrite the problem in words and as an equation.

   c. Solve for the unknown