Translate the verbal model into a mathematical model

$$50+20x$$

where x are the number of days that you've rented the car.

When we measure how fast a car or something is moving we are usually comparing quantities measured in different units like comparing distances with time. The fraction resulting is called a rate. The unit rate is when the denominator of the fraction is 1 unit.

Example

An airplane travels 760 miles in 2 hours. Calculate the unit rate.

$$\frac{760 \text{ miles}}{2 \text{ hours}} \qquad \frac{760\text{miles}\div 2}{2 \text{ hours}\div 2} \qquad \frac{380\text{miles}}{1 \text{ hour}}$$

If you're uncertain as to whether or not your expression is resulting in the wanted unit you can always do a unit analysis. In a unit analysis you exchange the numbers and variables in the expression with the corresponding units. Here we use the verbal model from example 1.

$$\underset{\text{(dollars)}}{\text{Administration fee}} + \underset{\text{(dollars/days)}}{\text{price each day}} \times \underset{\text{(days)}}{\text{number of days}}$$

And to test what the resulting unit is we only keep the units in the expression:

$$\text{dollars} + \frac{\text{dollars}}{\text{day}} \times \text{days} = \text{dollars}+\text{dollars}=\text{dollars}$$

Composing equations and inequalities

Equations and inequalities are both mathematical sentences formed by relating two expressions to each other. In an equation the two expressions are deemed equal which is shown by the symbol =.

x=y	x is equal to y