

Name: ANSWER KEY

Score: _____

Set up only the equation for the following problem. DO NOT SOLVE THIS EQUATION.

(1) List the quantities involved, indicating those whose values are known and those which are sought. (2) Write a preliminary analysis in pseudocode. (3) Clearly identify what your unknown represents.

A workman's basic hourly wage is \$10, but he receives one and a half times his hourly rate for any hours worked in excess of 40 per week. If his paycheck for the week is \$595, how many hours of overtime did he work?

Quantities: Basic hourly wage rate (\$10)
 Overtime hourly wage rate
 Pay check for the week (\$595)
 Basic hours worked (40)
 Overtime hours worked (?)
 Basic wage
 Overtime wage

Preliminary analysis:

Paycheck for week = Basic wage + Overtime wage

Basic wage = (Basic hours) (Basic Wage rate)
 $= (40)(10) = 400$

Overtime wage = (Overtime hours) (Overtime wage rate)

Overtime wage rate = $(1\frac{1}{2})(\text{Basic wage rate}) = (\frac{3}{2})(10)$

Let x = number of over time hours worked

Then $x(\frac{3}{2})(10) = 15x$ = overtime wage

$$\boxed{595 = 400 + 15x}$$