

Word problems

Important formulas:

Area of a rectangle

$$A = l \cdot w$$

Annual Interest

$$I = Pr$$

Distance

$$d = rt$$

Cost

$$C = nw$$

Amount of a substance

in s units of a

$$A = s \left(\frac{P}{100} \right)$$

solution of strength $P\%$.

Step 1) Translate word problem into a system of equations

Step 2) Solve the system

Ex) A boy on a 6hr trip walks for a certain time at 3 mph and cycles for the remaining time at an average of 10 mph if he covers 46 mi, how many hours does he walk?

Notes: Goal hrs walked

two portions: walked
biked

Distance problem $d = rt$

	d	r	t
Walked	$3x$	3 mph	x
Biked	$10y$	10 mph	y
Total	46 mi	$46/6 = 23/3$	6 hr

$$3x + 10y = 46$$

$$x + y = 6$$

→

(1)

(2)

$$-(3x + 3y) = 18$$

$$0 + 7y = 28$$

$$u_1 = 4$$

(2)

$$\lambda = 2$$

hours walked = 2

X	1000	38	1000
Y	1000	104	1000
TOTAL	2000	484	2000