Solving Word Problems Using Systems

Steps

1. Define all variables.
2. Write the system of equations.
3. Solve using the best method & showing all steps.
4. State your solution in sentence form.
5. Check your solution.

1. You are selling tickets for a high school basketball game. Student tickets cost $3 and general admission tickets cost $5. You sell 350 tickets and collect $1450. How many of each type of ticket did you sell?

Define variables:

S = # of Student Tickets
G = # of General Admin Tickets

System of equations:

$S + G = 350$

$3S + 5G = 1450$

Solve

$G = 200$

$S = 150$

State your solution(s):

I sold 200 general admission tickets and 150 student tickets.

2. At an Italian bistro, the costs of 2 plates of spaghetti and 1 salad is $27.50. The cost for 4 plates of spaghetti and 3 salads is $59.50. Find the cost of a plate of spaghetti and a salad.

Define variables:

P = cost plate of spaghetti

S = cost salad

System of equations:

$2P + S = 27.50$

$4P + 3S = 59.50$

Solve

$P = 11.50$

$S = 4.50$

State your solution(s):

A plate of spaghetti costs $11.50 and a salad costs $4.50.

3. Peggy walks at a rate of 2 miles per hour and jogs at a rate of 4 miles per hour. She walked and jogged 3.4 miles in 1.2 hours. For how long did Peggy jog and for how long did she walk?

Define variables:

W = hours walked

J = hours jogged

System of equations:

$$W + J = 1.2$$

$$2W + 4J = 3.4$$

State your solution(s):

Peggy walked for 0.7 hours and jogged for 0.5 hours.

Solve

$W = .7$

$J = .5$

Homework

Quiz TOMORROW!

Worksheet