

Summary of Solving Systems by Westerville South H.S.

“All I do is Solve”

[http://www.schooltube.com/video/7cf00e9cfb1c40c3abf3/All%20I%20Do%20Is%20Solve%20\(WSHS%20Math%20Rap\)](http://www.schooltube.com/video/7cf00e9cfb1c40c3abf3/All%20I%20Do%20Is%20Solve%20(WSHS%20Math%20Rap))

What is the Best Method for the following?

1. $y = 4x - 3$
 $5x - 2y = 6$

2. $4x - 5y = 13$
 $2x + 5y = 5$

3. $y = \frac{1}{2}x + 3$
 $y = -2x - 2$

What is the Best Method for the following?

4. $y = \frac{2}{3}x - 2$

$$y = -x + 3$$

5. $3x - 2y = 6$
 $y = 2x - 4$

6. $x + y = 4$
 $2x + 3y = 7$

Skills Check

- ☞ Clear off your desk.
- ☞ Pencil and calculator only.
- ☞ Show all of your work.
- ☞ Circle your answer (check your answer if time permits).
- ☞ When you are finished sit quietly.

GSE Algebra I

UNIT QUESTION: How do I justify and solve the solution to a system of equations or inequalities?

Standard: MCC9-12.A.REI.1, 3, 5, 6, and 12

Today's Question:

How do I set up word problems involving a system of equations?

Standard: MCC9-12.A.REI.6

Solving Word Problems Using Systems

Steps

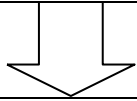
1. Define all variables.
2. Write the system of equations.
3. Solve using the best method & showing all steps.
4. State your solution in sentence form.
5. Check your solution.

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

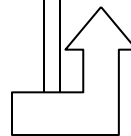
G = # of General Admin Tickets



System of equations:

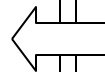
$$S + G = 350$$

$$3S + 5G = 1450$$



State your solution(s):

I sold 200 general admission tickets and 150 student tickets.



Solve

$$G = 200$$

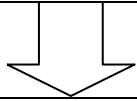
$$S = 150$$

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

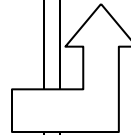
S = cost salad



System of equations:

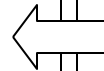
$$2P + S = 27.50$$

$$4P + 3S = 59.50$$



State your solution(s):

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



Solve

$$P = 11.50$$

$$S = 4.50$$

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:

$$\mathbf{W + J = 1.2}$$

$$\mathbf{2W + 4J = 3.4}$$

State your solution(s):

**Peggy walked for 0.7
hours and jogged for
0.5 hours.**

Solve

$$\mathbf{W = .7}$$

$$\mathbf{J = .5}$$