Solve the system using Linear Combination.

Warm-up

1) $2(8x + 9y = 15)$ → $16x + 18y = 30$

$9(5x - 2y = 17)$ → $45x - 18y = 153$

$61x = 183$

$x = 3$

$5(3) - 2y = 17$

$15 - 2y = 17$

$-15 \quad -15$

$\frac{-2y}{-2} = \frac{2}{-2}$

$y = -1$

$(3, -1)$

Solve the system using Substitution.

2) $x - 2y = 4$ → $x = 2y + 4$

$3x - 6y = 8$

$3(2y + 4) - 6y = 8$

$6y + 12 - 6y = 8$

$12 = 8$

No solution

Solving Linear Systems

Application Problems

-Set up each problem

Nov 4-2:11 PM

Homework Questions:

10.) (-6, 5)
1.) (2.33, -0.33)
2.) (2.71, 9.57)
3.) (11.08, 16.25)
4.) (24, -43)
4.) (4, 4)
18.) many solutions

14.) length 30
width 15
15.) 35 , 55
16.) 60, 120

1.) 6lbs $1.10 coffee
14lbs $0.80 coffee
2.) 25lbs $1.16 tea
35lbs $0.92 tea
3.) 12lbs $0.70 chips
18lbs $0.90 chips
4.) 11 nickels, 6 pennies
5.) 11 quarters, 5 dimes
6.) 14 dimes, 7 nickels
7.) 18, -7
8.) 9, 27
9.) 12, 7
10.) 38, 56
11.) $1600 at 2%
$4800 at 4%
12.) $4000 at 6%
$4600 at 5%
13.)$3500 at 5%
$1200 at 4.5%

Nov 2-2:22 PM

Bonus

Find the vertex of the following quadratic

$y=-(x-4)^2+7$

A. (4,-7)

B. (-4,7)

C. (4, 7)

D. (-4, -7)

Nov 14-7:54 AM

Algebra 2 Trig Daily Learning Target Quiz
Unit 4 - Day 2

1.) Solve by graphing: $y = -x + 5$ $-2x+3y=0$	2.) Solve by substitution: $8x+2y=2$ $x+3y=14$
3.) Solve by elimination: $7x-3y=6$ $-2x+5y=-10$	4.) A vendor sold 200 tickets for an upcoming rock concert. Floor seats were \$36 and stadium seats were \$28. The vendor sold \$6080 in tickets. How many floor seats and how many stadium seats were sold?

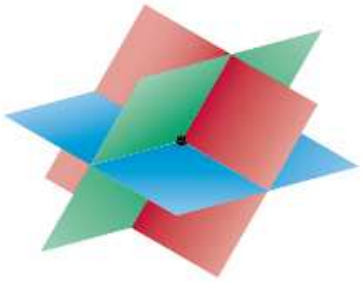
Nov 2-2:25 PM

Chapter 3
Systems
(3.4)3 Variable Systems

Dec 3-12:55 PM

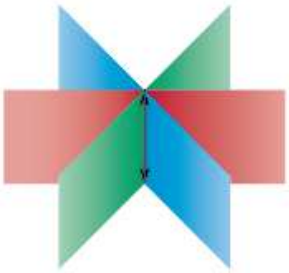
Exactly one solution

The planes intersect in a single point.



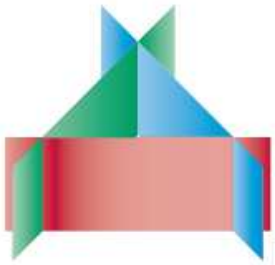
Infinitely many solutions

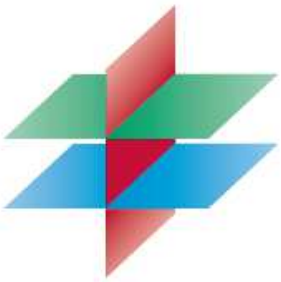
The planes intersect in a line or are the same plane.

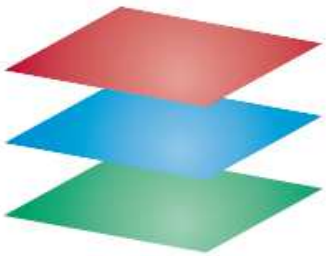


No solution

The planes have no common point of intersection.







Nov 10-9:59 AM

KEY CONCEPT *For Your Notebook*

The Elimination Method for a Three-Variable System

STEP 1 **Rewrite** the linear system in three variables as a linear system in two variables by using the elimination method.

STEP 2 **Solve** the new linear system for both of its variables.

STEP 3 **Substitute** the values found in Step 2 into one of the original equations and solve for the remaining variable.

If you obtain a false equation, such as $0 = 1$, in any of the steps, then the system has no solution.

If you do not obtain a false equation, but obtain an identity such as $0 = 0$, then the system has infinitely many solutions.

Dec 3-12:56 PM

Notes Sheet

(1) $2x-y+z=4$

(2) $x+3y-z=11$

(3) $4x+y-z=14$

(1) + (2)

$2x-y+z=4$

$x+3y-z=11$

(4) $3x+2y=15$

(1) + (3)

$2x-y+z=4$

$4x+y-z=14$

(5) $6x=18$

$x=3$

(4) $3(3)+2y=15$

$9+2y=15$

$2y=6$

$y=3$

(1) $2x-y+z=4$

$2(3)-3+z=4$

$6-3+z=4$

$z=1$

(x, y, z)

$(3, 3, 1)$

Nov 4-2:15 PM

Solve.

Example

$x + 2(-1) - 3(1) = -3$

$x - 2 - 3 = -3$

$x - 5 = -3$

$x = 2$

$(2, -1, 1)$

① $x + 2y - 3z = -3$

② $2x - 5y + 4z = 13$

③ $5x + 4y - z = 5$

-2 ① + ②

$-2x - 4y + 6z = 6$

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

④ $-9y + 10z = 19$

-5 ① + ③

cancel same variable

$-5x - 10y + 15z = 15$

$5x + 4y - z = 5$

⑤ $-6y + 14z = 20$

14

3

42

Cancel y

-2 ④ + 3 ⑤

$18y - 20z = -38$

$-18y + 42z = 60$

$22z = 22$

$z = 1$

$-9y + 10(1) = 19$

$\frac{-9y}{-9} = \frac{9}{-9}$

$y = -1$

Dec 3-12:58 PM

Solve.

Example

① $3x - 2y + 4z = 20$

② $-x + 5y + 12z = 73$

③ $x + 3y - 2z = 1$

② + ③ cancel x

$-x + 5y + 12z = 73$

$x + 3y - 2z = 1$

④ $8y + 10z = 74$

$\div 2$ $\quad 4$ $\quad 296$

① + 3②

$3x - 2y + 4z = 20$

$-3x + 15y + 36z = 219$

⑤ $13y + 40z = 239$

-4 ④ + ⑤

$-32y - 40z = -296$

$13y + 40z = 239$

$-19y = -57$

$\div -19 \quad \div -19$

$y = 3$

$8(3) + 10z = 74$

$24 + 10z = 74$

$-24 \quad -24$

$10z = 50$

$z = 5$

③ $x + 3(3) - 2(5) = 1$

$x + 9 - 10 = 1$

$x - 1 = 1$

$x = 2$

$(2, 3, 5)$

$73 \div 3 = 24$

Dec 3-12:59 PM

Thanksgiving Trivia

Nov 16-9:30 AM

Example

Solve.

① $2x + 4y + 10z = 14$

② $x + 2y + 5z = -4$

③ $3x - 4y - 3z = 15$

① + ③ (cancel y)

$2x + 4y + 10z = 14$

$3x - 4y - 3z = 15$

④ $5x + 7z = 29$

$2 \times$ ② + ③

$2x + 4y + 10z = -8$

$3x - 4y - 3z = 15$

⑤ $5x + 7z = 7$

④ − ⑤

$5x + 7z = 29$

$-5x - 7z = -7$

$0 = 22$

No solution

Dec 6-12:51 PM

Example

A theater group sold a total of 440 tickets for $3940. Each regular ticket costs $5, each premium ticket costs $15, and each elite ticket costs $25. The number of regular tickets was three times the number of premium and elite tickets combined. How many of each type of ticket were sold?

x = regular y = premium z = elite

$$x + y + z = 440$$

$$5x + 15y + 25z = 3940$$

$$x = 3(y + z)$$

Dec 6-12:52 PM

And your assignment:
Day 2 (3.4)
-Quiz next class
(2 variable systems, word problems,
3 variable systems)

Dec 3-1:01 PM