Algebra 1

3.5 Elimination Method

Name:_____

Write your questions and thoughts here!

Notes

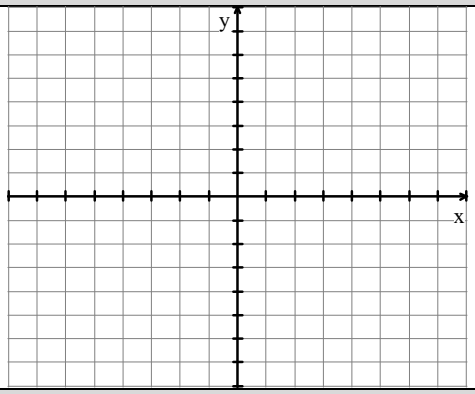
1st Equation: $\boldsymbol{3x + 3y = 3}$

2nd Equation: $\boldsymbol{x - 2y = 4}$

3rd Equation:

Opposite Coefficients

1. $3x + y = 6$
   $x - y = 2$



Change One Equation

2. $-10x + 3y = -7$
   $5x + 4y = 9$

3. $-2x - 4y = -4$
   $-x - 8y = -8$

Change BOTH Equations

4. $5x + 4y = 17$
   $3x + 3y = 9$

Rearrange First

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

Write your questions and thoughts here!

Which method would be best for solving this system, Substitution or Elimination? Circle the part of the system that justifies your answer.

6. $4x - y = -11$ $-2x + y = -2$	7. $x - 3y = -7$ $3x + 7y = -2$	8. $7x + 4y = 6$ $7x - 3y = 10$

NO SOLUTION	INFINITE SOLUTIONS
9. $12x + 10y = -14$ $6x + 5y = -9$	10. $4x + 2y = 4$ $8x + 4y = 8$

Now summarize what you learned!

3.5 Elimination Method – Solving Systems of Equations

Practice

Algebra 1

Which method would be best for solving this system, Substitution or Elimination? Circle the part of the system that justifies your answer.

1. $3x + 9y = 9$ $x + 3y = 3$	2. $-3x - 4y = 5$ $3x + 2y = -8$	3. $4x - 3y = -14$ $6x + 3y = -9$	4. $2x + 3y = 6$ $x = 3y - 12$
5. $3x = y$ $4x - 2y = 2$	6. $3x - 13y = -11$ $5x + y = 5$	7. $8x - 2y = 12$ $-4x - 5y = 8$	8. $3x + 4y = 10$ $5x - 4y = 8$

Solve each system of equations using ELIMINATION.

9. $6x - 8y = -4$ $4x + 2y = -10$	10. $-8x - 5y = -9$ $2x - y = 9$	11. $3y - x = -5$ $-7x + 4y = -18$
12. $4x + 4y = -4$ $5x + 3y = -9$	13. $2x + 6y = -2$ $x - 2y = 5$	14. $3x - 6y = -18$ $9x + 2y = 6$
15. $15x + 3y = 7$ $1 - 5x = y$	16. $2x + 6y = 14$ $x + 3y = 7$	17. $10x + 5y = -15$ $3y + 5 = -5x$

18. $2x + 4y = -9$
$3x + 5y = -12$

19. $9x - 6y = 3$
$6x - 4y = 2$

20. $6x + 2y = 4$
$-4x - 5y = -10$

21. $2x = 4y$
$3x + 3y = 18$

22. $x + y = 3$
$6x + 4y = 11$

23. $4x - 3y = -2$
$-8x + 6y = -8$

Simplify each expression

24. $(4p + 3)(3p - 9)$

25. $(3a^2 - 4) + (5a^2 - 2)$

26. $(5c^2 + 2c + 8) - (4c^2 - 5)$

27. Solve $d = rt + w$ for r

28. Solve $g = \frac{c}{x}$ for x

3.5 Elimination Method – Solving Systems of Equations

Wrap up

Practice check: The next two questions are just like the practice, but we provide no answers. If you can't do these problems, then you're definitely not ready for a Mastery Check!

29. $x + 6y = 4$
$3x + y = 12$

30. $4x - 5y = 17$
$6x + 2y = 16$

31. You have two 5-gallon buckets. One is filled with water, but has a slow leak, leaking out water at 7 ounces per minute. The other is empty but is being used to catch water from a leaky faucet at a rate of 4 ounces per minute. Assume they both start at the same time. *Hint:* There are 128 ounces in a gallon.

a. Identify the unknowns and assign them variables. Explain the meaning of each variable below.

b. Set up a system of equations to model this scenario.

c. Use elimination to solve the system.

d. How long will it take for the buckets to have the exact same amount of water?

e. How much water will there be (in gallons)?

Exit Ticket

At a state fair, there is a game where you throw a ball at a pyramid of cans. If you knock over all of the cans, you win a prize. The cost is 3 throws for \$1, but if you have an armband you get 6 throws for \$1. The armband costs \$10.

a. The cost equation for 3 throws is $C = \frac{1}{3}t$ where C is the cost and t is the number of throws. Write the cost equation for the other option with the armband.

b. How many throws would it take to cost the same amount with either option.