

3.5 Elimination Method

Name: _____

Write your questions
and thoughts here!**Notes**

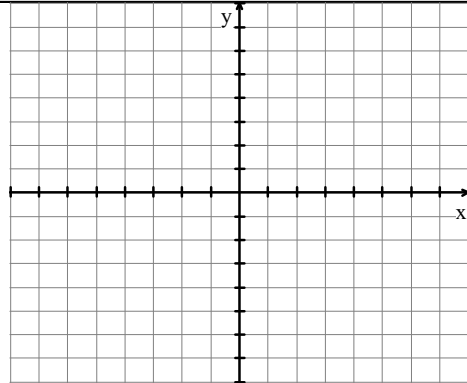
1st Equation: $3x + 3y = 3$

2nd Equation: $x - 2y = 4$

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

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.

- a. Let w represent the amount of water in the bucket (measured in ounces). Let t represent the amount of time that has passed (measured in minutes). Set up an equation to represent both buckets. *Hint:* There are 128 ounces in a gallon.

Equation for the empty bucket:

Equation for the full bucket:

- b. Solve the system (either substitution or elimination...you choose).
- c. How long will it take for the buckets to have the exact same amount of water? Round to two decimal places.
- d. At that moment, how much water will each bucket contain?