Algebra1
Day 1

Standard(s)	A1.AAPR.1*	Add, subtract, and multiply polynomials and understand that polynomials are closed under these operations. (Limit to linear; quadratic.)
	A1.ACE.1*	Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable. (Limit to linear; quadratic; exponential with integer exponents.)
	A1.ACE.2*	Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)
	A1.ACE.4*	Solve literal equations and formulas for a specified variable including equations and formulas that arise in a variety of disciplines.
Learning Targets/I Can Statements	1.I can identify and factor binomials that are the differences of squares when given examples. 2.I can identify and factor perfect square trinomials when given examples. 3. I can and factor difference of two cubes when given examples. 4.I can find Greatest Common Factor.	
Essential Question(s)	1. What strategies can be used to Factor polynomial expressions? 2. How can finding patterns help to find GCF?	
Resources	https://www.khanacademy.org/math/algebra2/x2ec2f6f830c9fb89:poly-factor/x2ec2f6f830c9fb89:common-factor/e/factoring-polynomials https://www.mangahigh.com/en-us/games/wrecksfactor https://www.mangahigh.com/en-us/games/wrecksfactor	
Learning Activities or Experiences	Chapter Summary	

	1st: Recall questions (attached) 2nd: Watch the Khan Academy video (link above) Alternative: Notes on GCF and factoring 3rd: Factoring polynomials Game (link above) 4th: Assignment

NOTES: FACTORING GCF NAME: _____

WHAT IS THE GREATEST COMMON FACTOR:

1. 6 and 8
2. 5 and 30
3. 12 and 6 and 9
4. 4 and 8 and 10

FACTOR OUT THE GCF:

5. $3x^2 - 27$
6. $2x^2 + 8x + 8$

PRACTICE: Factor out the GCF

7. $6a + 20$	8. $24x^2 + 18$
9. $x^2 - 36x$	10. $2x^2 + 24x$

Algebra1
Day 2

Standard(s)	A1.AAPR.1*	Add, subtract, and multiply polynomials and understand that polynomials are closed under these operations. (Limit to linear; quadratic.)
	A1.ACE.1*	Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable. (Limit to linear; quadratic; exponential with integer exponents.)
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Essential Question(s)	1. What strategies can be used to factor polynomial expressions? 2. How can finding patterns help in the process of factoring polynomials?	
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Learning Activities or Experiences	Chapter Summary	

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Students can turn in a soft copy of their work on Teams365 or they can bring a hard copy of their work when they return to school. Also Polynomials topic posted on E2020.

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1. Binomial Conjugates: (A + B) (A – B) ← Same binomial except addition/subtraction signs

Recall, $(x + 5)(x - 5) =$

Ex 1:

Ex 2:

Formula:

PRACTICE!

$a^2 - b^2$: $(a + b)(a - b)$

Examples:

$x^2 - 25 =$

$16x^2 - 9 =$

$49x^2 - 121 =$

$100a^2 - 81b^2 =$

2. PRIME BINOMIALS: _____

a) $121x^2 + 64 =$

b) $121x^2 - 64 =$

c) $4x^2 - 1 =$

d) $4x^2 + 1 =$

Algebra1
Day 3

Standard(s)	A1.AAPR.1* Add, subtract, and multiply polynomials and understand that polynomials are closed under these operations. (Limit to linear; quadratic.) A1.ACE.1* Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable. (Limit to linear; quadratic; exponential with integer exponents.) A1.ACE.2* Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.) A1.ACE.4* Solve literal equations and formulas for a specified variable including equations and formulas that arise in a variety of disciplines.
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Learning Activities or Experiences	Chapter Summary

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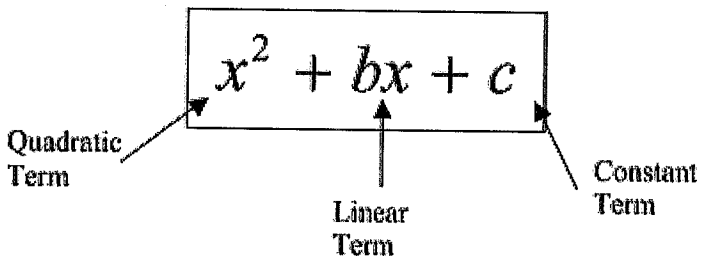
Factoring "Easy" Trinomials



"Easy" Trinomials: The Leading Coefficient is _____.

Method

1. Write down two pairs of parentheses.
2. Determine the factors of C.
3. Find the combination of factors that will add/subtract to equal B.
4. Place the values into the parentheses
5. Check using FOIL.

Factoring Trinomials (A=1)

Name: _____ Date: _____

Factor each trinomial (rewrite as a product of two binomials).

1. $x^2 + 6x + 5$ ( )( )	4. $x^2 - 8x + 7$ ( )( )
2. $x^2 + 4x + 3$ ( )( )	5. $x^2 - 24x + 23$ ( )( )
3. $x^2 + 12x + 11$ ( )( )	6. $x^2 - 12x + 11$ ( )( )
7. $x^2 - 2x - 3$ ( )( )	10. $x^2 + 2x - 3$ ( )( )

Algebra 1
Day 4

Standards	***A1.AREI.6**** ***Solve*** *systems of linear equations algebraically and graphically focusing on pairs of linear equations in two variables.* ***A1.AREI.11**** ***Solve*** *an equation of the form f(x)=g(x) graphically by identifying the x- coordinate(s) of the point(s) of intersection of the graphs of y=f(x) and y=g(x). (Limit to linear; quadratic; exponential)*
Learning Targets/I Can Statements	I can determine the intersection point of two lines from a graph. I can understand that systems of equations have one, zero, or infinite solutions.
Essential Question(s)	**How I determine the intersection point of two linear equations by graphing?** **How can I determine the number of solutions when given a system of equations?**
Resources	https://www.khanacademy.org/math/algebra-basics/alg-basics-systems-of-equations http://crctlessons.com/systems-of-equations-game.html https://www.desmos.com/calculator
Learning Activities or Experiences	1st: Recall questions (attached) 2nd: Watch the Khan Academy video (link above) system of linear equation basics and number of solutions to systems of equations Alternative: Notes on systems on linear equations (Solutions and graphing) 3rd: System of linear equations game 4th: Assignment

Recall Questions

1. How many solutions are there for the following equation $3x + 8 = 6x - 3$?

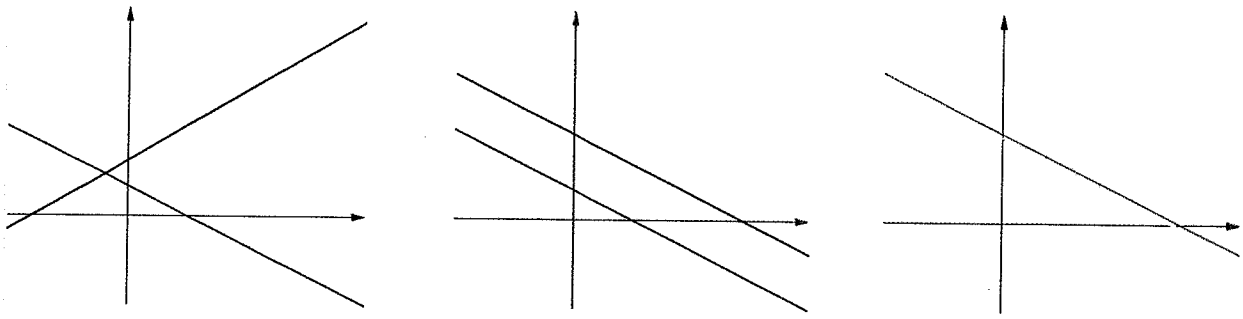
2. How many solutions are there for the following equation $2(x + 3) = 5X - 3X + 3$?

3. How many solutions are there for the following equation $\frac{4X-6}{2} = 2X - 3$?

4. What is the solution: $-3x + 7x + 4 = 4x - 10$

5. What is the solution: $\frac{2x-3}{4} = \frac{3x+1}{3}$

Systems of Linear Equations



System of Linear Equations: is a collection of two or more equations.

Number of solutions

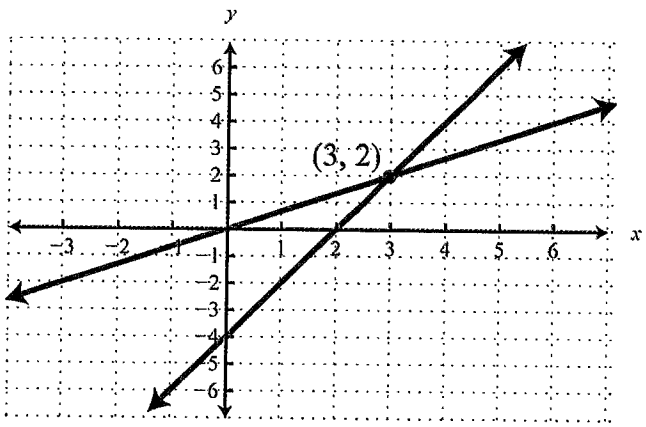
We will be looking at two ways to find the number of solutions to a system of linear equations.

1st : We will be looking at graphs of systems of linear equations.

2nd: We will be looking at linear equations:

One solution

There is one solution when the graphs intersect at a given point.

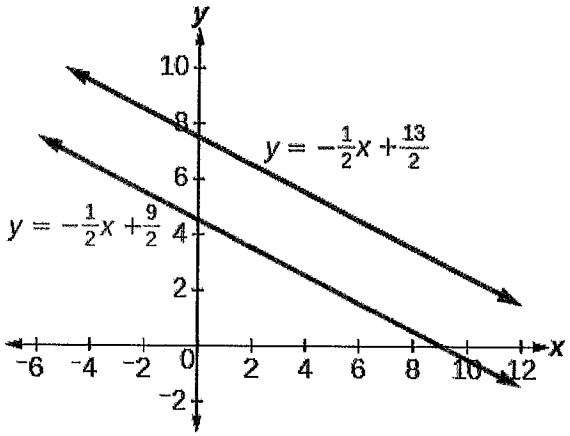


When equations are in slope intercept form, the linear equations will have different slopes.

Ex: y = 2x +3 and y = 3x -4

No solution

There is no solution when the lines are parallel.

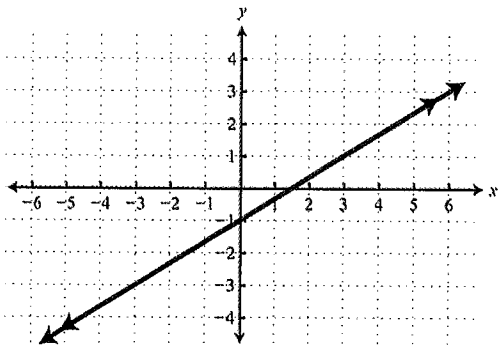


When equations are in slope intercept form, the linear equations will have the same slope but different y intercepts.

Ex: y = -3x +2 and y = -3x -3

Infinite solution

When only one line appears on a graph, there is infinite solutions (many). The lines will overlap each other



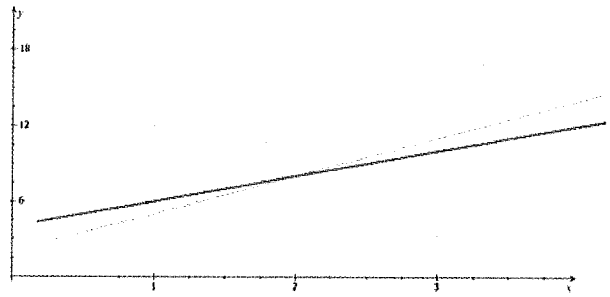
When equations are in slope intercept form, the linear equations have the same slopes and the same y intercepts.

Ex: y =-5x + 4 and y = 4 – 5x

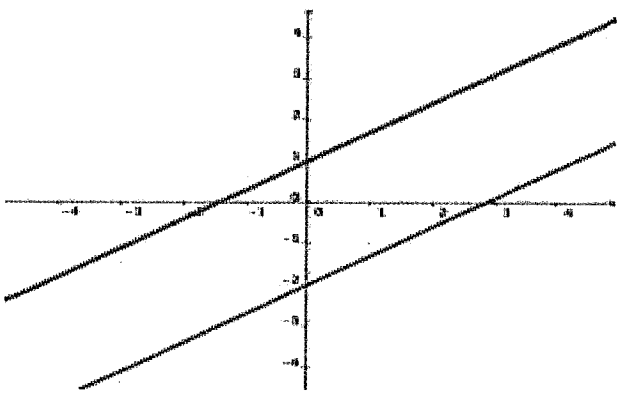
Your Turn: Tell how many solutions to the system of linear equations.

1. Y = -3x + 5x and 3x + y = 10
2. Y = ½ x + 4 and x – 2y = -8
3. 3x -2y = 10 and y = 2/3x + 12

4.

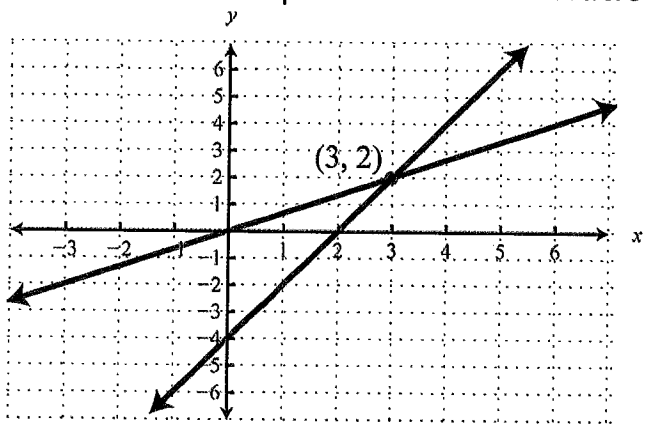


5.



Solutions of linear equations by graphing

The intersections of linear equations is the solution.



The solution to the above system of linear equations is (3,2).

System of Linear equations

Algebraically

The coordinate that satisfies both equations is the solution to the system of equations.

Ex: $3x + 3y = 9$ and $y = 2x - 3$ (2, 1)

$3(2) + 3(1) = 9$ $(1) = 2(2) - 3$

$6 + 3 = 9$ $1 = 4 - 3$

Ex: $-2x + 5y = 10$ and $4x + y = 12$ (0, 2)

$-2(0) + 5(2) = 10$ $4(0) + 2 = 12$

$0 + 10 = 10$ $0 + 2 = 12$

This is not a solution because it didn't satisfy both equations?

Your turn:

1. Is (-3,4) a solution to the system of equations?

   $y - x = -7$ and $2x - 2y = -14$

2. Is (2, 3) a solution to the system of equations?

   $Y = x + 1$ and $2y = 3x$

Day 5
Algebra 1

Standards	***A1.AREI.6a*** ***Solve systems of linear equations using the substitution method.*** ***A1.AREI.6b*** ***Solve systems of linear equations using linear combination.***
Learning Targets/I Can Statements	I can use substitution to solve a system of linear equations. I can use elimination to solve a system of linear equations.
Essential Question(s)	**How can I solve system of equations by the substitution method?** **How can I solve system of equations by the combination method?**
Resources	https://www.khanacademy.org/math/algebra-basics/alg-basics-systems-of-equations http://crctlessons.com/systems-of-equations-game.html https://www.desmos.com/calculator https://www.mathplanet.com/education/algebra-1/systems-of-linear-equations-and-inequalities/the-elimination-method-for-solving-linear-systems
Learning Activities or Experiences	1st: Recall questions (attached) 2nd: Watch the Khan Academy video (link above) system of linear equation substitution and elimination method Alternative: Notes on systems on linear equations (elimination and substitution method) 3rd: System of linear equations game 4th: Assignment

Recall Questions

1. How many solutions are there for the following equation $5x + 8 = 2x - 3$?

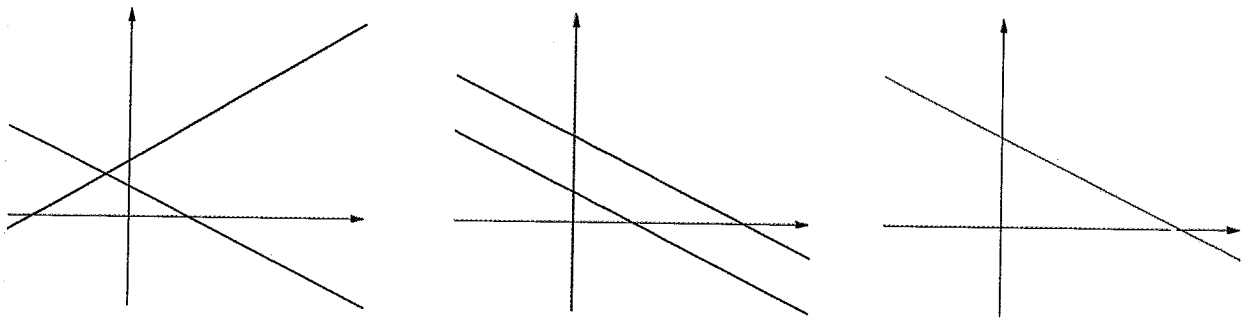
2. How many solutions are there for the following equation $7(x + 3) = 7x + 3$?

3. How many solutions are there for the following equation $\frac{4X-6}{2} = 5X - 3$?

4. What is the solution: $-3(x+4) = 4(x-10)$

5. What is the solution: $\frac{x-3}{4} = \frac{x+1}{3}$

Systems of Linear Equations



System of Linear Equations: is a collection of two or more equations.

Solving by combination method

To solve a system of equations using substitution...

$2x + y = 3$ and $x + 2y = 12$

1. Isolate one of the variables in one of the equations, e.g. rewrite $2x+y=3$ as $y=3-2x$.

2. You can now express the isolated variable using the other one. *Substitute* that expression into the second equation, e.g. rewrite $x+2y=5$ as $x+2(3-2x)=12$.

3. Now you have an equation with one variable! Solve it, and use what you got to find the other variable.

$x + 6 - 4x = 5$

$-3x + 6 = 12$

$-6 \quad -6$

$-3x = 6$

$x = -2$

4. Substitute the x value back into the equation $y = 3-2x$

$y = 3 - 2(-2)$

$y = 3 + 4$

$y = 7$

solution = (-2,7)

Your turn:

$-3x + y = 7$ and $y = 4x$

Solving by elimination method

$3y+2x=6$

$5y-2x=10$

We can eliminate the x-variable by addition of the two equations.

$3y+2x=6$

$+5y-2x=10$

$8y = 16$

$y=2$

The value of y can now be substituted into either of the original equations to find the value of x

$3y+2x=6$

$3(2)+2x=6$

$6+2x=6$

$x=0$

The solution of the linear system is (0, 2).

Your Turn:

$4x - 2y = 12$

$-4x + 6y = 4$