Prerequisite Topics (21 topics)

Objectives | Dates
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1. 1 ExpProp 4.1 (26 topics) | 01/07/2019 12:00 AM - 01/13/2019 11:59 PM
2. 2 OperationsPoly. 4.2-4.4 (24 topics) | 01/14/2019 12:00 AM - 01/20/2019 11:59 PM
3. 3 Factorization 4.5-4.7 (26 topics) | 01/21/2019 12:00 AM - 01/27/2019 11:59 PM
4. 4 Rational Exp. 5.1-5.4 (28 topics) | 01/28/2019 12:00 AM - 02/03/2019 11:59 PM
5. 5 SimpRadicals 6.1-6.3 (22 topics) | 02/04/2019 12:00 AM - 02/10/2019 11:59 PM
6. 6 OperRadical 6.4-6.6 (18 topics) | 02/11/2019 12:00 AM - 02/17/2019 11:59 PM
7. 7 SolveLnEq 1.1,1.3,5.6 (26 topics) | 02/18/2019 12:00 AM - 02/24/2019 11:59 PM
8. 8 Svl 1.6,4.8,5.5,6.7 (18 topics) | 02/25/2019 12:00 AM - 03/03/2019 11:59 PM
9. 9 Graphing 2.1-2.3 (28 topics) | 03/04/2019 12:00 AM - 03/10/2019 11:59 PM
10. Spring Break 1 Topic (1 topics) | 03/11/2019 12:00 AM - 03/17/2019 11:59 PM
11. 10 Graphing 2.7,3.1,3.5 (17 topics) | 03/18/2019 12:00 AM - 03/24/2019 11:59 PM
12. 11 Appl. 1.2,2.4,3.4,5.6 (13 topics) | 03/25/2019 12:00 AM - 03/31/2019 11:59 PM
13. 12 Inequ. 1.4-1.5,1.7 (19 topics) | 04/01/2019 12:00 AM - 04/07/2019 11:59 PM
14. 13 Cmplx Quad 6.8,7.1,7.2 (14 topics) | 04/08/2019 12:00 AM - 04/14/2019 11:59 PM

Accessible Topic - Topics accessible to visually impaired students using a screen reader.

- Multiplicative property of equality with decimals
- Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution
- Solving for a variable in terms of other variables using addition or subtraction: Basic
- Solving for a variable in terms of other variables using addition or subtraction: Advanced
- Solving for a variable in terms of other variables using addition or subtraction with division
- Translating a sentence into a one-step equation
- Solving a decimal word problem using a linear equation of the form $Ax + B = C$
- Solving a system of linear equations using substitution
- Power and product rules with positive exponents
- Power and quotient rules with positive exponents
- Quotient rule with negative exponents: Problem type 2
- Power of a power rule with negative exponents
- Factoring out a monomial from a polynomial: Multivariate
- Factoring a quadratic in two variables with leading coefficient 1
- Factoring a difference of squares in one variable: Advanced
- Factoring a polynomial involving a GCF and a difference of squares: Univariate
- Solving a quadratic equation needing simplification
- Simplifying a ratio of factored polynomials: Linear factors
- Special products of radical expressions: Conjugates and squaring
- Introduction to solving a radical equation
- Solving a radical equation that simplifies to a linear equation: Two radicals
Section 4.1 (26 Topics)
- Understanding the product rule of exponents
- Introduction to the product rule of exponents
- Understanding the power rules of exponents
- Introduction to the power of a product rule of exponents
- Power rules with positive exponents: Multivariate products
- Power rules with positive exponents: Multivariate quotients
- Simplifying a ratio of multivariate monomials: Basic
- Introduction to the quotient rule of exponents
- Quotient of expressions involving exponents
- Simplifying a ratio of multivariate monomials: Advanced
- Evaluating expressions with exponents of zero
- Evaluating an expression with a negative exponent: Whole number base
- Evaluating an expression with a negative exponent: Positive fraction base
- Evaluating an expression with a negative exponent: Negative integer base
- Rewriting an algebraic expression without a negative exponent
- Introduction to the product rule with negative exponents
- Product rule with negative exponents
- Quotient rule with negative exponents: Problem type 1
- Power rules with negative exponents
- Power and quotient rules with negative exponents: Problem type 1
- Power, product, and quotient rules with negative exponents
- Scientific notation with positive exponent
- Scientific notation with negative exponent
- Converting between scientific notation and standard form in a real-world situation
- Multiplying numbers written in scientific notation: Basic
- Dividing numbers written in scientific notation: Basic

Section 5.1 (1 Topic)
- Simplifying a ratio of multivariate monomials: Advanced

2 OperationsPoly. 4.2-4.4 (24 Topics, due on 01/20/2019 11:59 PM)

Section 1.3 (1 Topic)
- Evaluating a quadratic expression: Integers

Section 4.2 (5 Topics)
- Evaluating a quadratic expression: Integers
- Degree and leading coefficient of a univariate polynomial
- Simplifying a sum or difference of two univariate polynomials
- Simplifying a sum or difference of three univariate polynomials
- Simplifying a sum or difference of multivariate polynomials

Section 4.3 (13 Topics)
- Multiplying a univariate polynomial by a monomial with a positive coefficient
- Multiplying a univariate polynomial by a monomial with a negative coefficient
- Multiplying a multivariate polynomial by a monomial
- Multiplying binomials with leading coefficients of 1
- Multiplying binomials with leading coefficients greater than 1
- Multiplying binomials in two variables
- Multiplying conjugate binomials: Univariate
- Multiplying conjugate binomials: Multivariate
- Squaring a binomial: Univariate
- Squaring a binomial: Multivariate
- Multiplying binomials with negative coefficients
- Multiplication involving binomials and trinomials in one variable
- Multiplication involving binomials and trinomials in two variables

**Section 4.4 (6 Topics)**
- Dividing a polynomial by a monomial: Univariate
- Dividing a polynomial by a monomial: Multivariate
- Polynomial long division: Problem type 1
- Polynomial long division: Problem type 2
- Polynomial long division: Problem type 3
- Synthetic division

**3 Factorization 4.5-4.7 (26 Topics, due on 01/27/2019 11:59 PM)**

**Section 4.5 (11 Topics)**
- Greatest common factor of 2 numbers
- Factoring a linear binomial
- Introduction to the GCF of two monomials
- Greatest common factor of three univariate monomials
- Greatest common factor of two multivariate monomials
- Factoring out a monomial from a polynomial: Univariate
- Factoring out a binomial from a polynomial: GCF factoring, basic
- Factoring a univariate polynomial by grouping: Problem type 1
- Factoring a univariate polynomial by grouping: Problem type 2
- Factoring a multivariate polynomial by grouping: Problem type 1
- Factoring a multivariate polynomial by grouping: Problem type 2

**Section 4.6 (11 Topics)**
- Factoring a quadratic with leading coefficient 1
- Factoring out a constant before factoring a quadratic
- Factoring a quadratic with leading coefficient greater than 1: Problem type 1
- Factoring a quadratic with leading coefficient greater than 1: Problem type 2
- Factoring a quadratic with leading coefficient greater than 1: Problem type 3
- Factoring a quadratic by the ac-method
- Factoring a quadratic in two variables with leading coefficient greater than 1
- Factoring a quadratic with a negative leading coefficient
- Factoring a perfect square trinomial with leading coefficient 1
- Factoring a perfect square trinomial with leading coefficient greater than 1
- Factoring a product of a quadratic trinomial and a monomial

**Section 4.7 (4 Topics)**
- Factoring a difference of squares in one variable: Basic
- Factoring a difference of squares in two variables
- Factoring a polynomial involving a GCF and a difference of squares: Multivariate
- Factoring a sum or difference of two cubes

**4 Rational Exp. 5.1-5.4 (28 Topics, due on 02/03/2019 11:59 PM)**
Simplifying a ratio of univariate monomials

Section 5.1 (5 Topics)
- Simplifying a ratio of univariate monomials
- Simplifying a ratio of polynomials using GCF factoring
- Simplifying a ratio of linear polynomials: 1, -1, and no simplification
- Simplifying a ratio of polynomials by factoring a quadratic with leading coefficient 1
- Simplifying a ratio of polynomials: Problem type 1

Section 5.2 (5 Topics)
- Multiplying rational expressions involving multivariate monomials
- Multiplying rational expressions made up of linear expressions
- Multiplying rational expressions involving quadratics with leading coefficients of 1
- Dividing rational expressions involving multivariate monomials
- Dividing rational expressions involving linear expressions

Section 5.3 (16 Topics)
- Least common multiple of 2 numbers
- Introduction to the LCM of two monomials
- Least common multiple of two monomials
- Writing equivalent rational expressions with monomial denominators
- Writing equivalent rational expressions with polynomial denominators
- Writing equivalent rational expressions involving opposite factors
- Introduction to adding fractions with variables and common denominators
- Adding rational expressions with common denominators and monomial numerators
- Adding rational expressions with common denominators and binomial numerators
- Adding rational expressions with common denominators and GCF factoring
- Adding rational expressions with denominators ax and bx: Basic
- Adding rational expressions with denominators ax^n and bx^m
- Adding rational expressions with multivariate monomial denominators: Basic
- Adding rational expressions with linear denominators with common factors: Basic
- Adding rational expressions with denominators ax-b and b-ax

Section 5.4 (2 Topics)
- Complex fraction without variables: Problem type 1
- Complex fraction without variables: Problem type 2

5 SimpRadicals 6.1-6.3 (22 Topics, due on 02/10/2019 11:59 PM)

Section R.2 (2 Topics)
- Square root of a perfect square
- Using a calculator to approximate a square root

Section R.3 (3 Topics*)
- Square root of a perfect square
- Square root of a rational perfect square
- Square roots of perfect squares with signs

Section 6.1 (10 Topics)
- Square root of a perfect square
- Using a calculator to approximate a square root
- Finding all square roots of a number
- Square root of a rational perfect square
- Square roots of perfect squares with signs
• Square roots of integers raised to even exponents
• Introduction to simplifying a radical expression with an even exponent
• Square root of a perfect square monomial
• Cube root of an integer
• Table for a square root function

Section 6.2 (6 Topics)
• Converting between radical form and exponent form
• Rational exponents: Unit fraction exponents and whole number bases
• Rational exponents: Unit fraction exponents and bases involving signs
• Rational exponents: Non-unit fraction exponent with a whole number base
• Rational exponents: Product rule
• Rational exponents: Quotient rule

Section 6.3 (6 Topics)
• Simplifying the square root of a whole number less than 100
• Simplifying the square root of a whole number greater than 100
• Simplifying a radical expression with an even exponent
• Introduction to simplifying a radical expression with an odd exponent
• Simplifying a radical expression with an odd exponent
• Simplifying a radical expression with two variables

(*) Some topics in this section are also covered in a previous section of this Objective. Topics are only counted once towards the total number of topics for this Objective.

6 OperRadical 6.4-6.6 (18 Topics, due on 02/17/2019 11:59 PM)

Section 6.4 (4 Topics)
• Introduction to square root addition or subtraction
• Square root addition or subtraction
• Square root addition or subtraction with three terms
• Introduction to simplifying a sum or difference of radical expressions: Univariate

Section 6.5 (8 Topics)
• Introduction to square root multiplication
• Square root multiplication: Basic
• Square root multiplication: Advanced
• Introduction to simplifying a product of radical expressions: Univariate
• Simplifying a product of radical expressions: Univariate
• Introduction to simplifying a product involving square roots using the distributive property
• Simplifying a product involving square roots using the distributive property: Basic
• Simplifying a product involving square roots using the distributive property: Advanced

Section 6.6 (6 Topics)
• Simplifying a quotient of square roots
• Simplifying a quotient involving a sum or difference with a square root
• Rationalizing a denominator: Quotient involving square roots
• Rationalizing a denominator: Square root of a fraction
• Rationalizing a denominator: Quotient involving a monomial
• Rationalizing a denominator using conjugates: Integer numerator

7 SolveLnr Eq 1.1,1.3,5.6 (26 Topics, due on 02/24/2019 11:59 PM)

Section 1.1 (21 Topics)
• Additive property of equality with integers
Additive property of equality with signed fractions
Multiplicative property of equality with whole numbers
Multiplicative property of equality with fractions
Multiplicative property of equality with integers
Multiplicative property of equality with signed fractions
Identifying solutions to a linear equation in one variable: Two-step equations
Additive property of equality with a negative coefficient
Solving a two-step equation with integers
Solving a multi-step equation given in fractional form
Identifying properties used to solve a linear equation
Solving a two-step equation with signed decimals
Solving a linear equation with several occurrences of the variable: Variables on the same side
Solving a linear equation with several occurrences of the variable: Variables on both sides
Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution
Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions
Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators
Solving a two-step equation with signed fractions
Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients
Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators
Solving equations with zero, one, or infinitely many solutions

Section 1.3 (2 Topics)
- Solving for a variable in terms of other variables using multiplication or division: Basic
- Solving for a variable in terms of other variables using multiplication or division: Advanced

Section 5.6 (3 Topics)
- Solving a proportion of the form \(x/a = b/c\)
- Solving a proportion of the form \((x+a)/b = c/d\)
- Solving a proportion of the form \(a/(x+b) = c/x\)

8 Slv 1.6,4.8,5.5,6.7 (18 Topics, due on 03/03/2019 11:59 PM)

Section 1.6 (5 Topics)
- Introduction to solving an absolute value equation
- Solving an absolute value equation: Problem type 1
- Solving an absolute value equation: Problem type 2
- Solving an absolute value equation: Problem type 3
- Solving an absolute value equation: Problem type 4

Section 4.8 (4 Topics)
- Solving an equation written in factored form
- Finding the roots of a quadratic equation of the form \(ax^2 + bx = 0\)
- Finding the roots of a quadratic equation with leading coefficient 1
- Finding the roots of a quadratic equation with leading coefficient greater than 1

Section 5.5 (4 Topics)
- Solving a rational equation that simplifies to linear: Denominator \(x\)
- Solving a rational equation that simplifies to linear: Denominator \(x+a\)
- Solving a rational equation that simplifies to linear: Denominators \(a, x,\) or \(ax\)
- Solving for a variable in terms of other variables in a rational equation: Problem type 1

Section 6.7 (5 Topics)
- Solving a radical equation that simplifies to a linear equation: One radical, basic
- Solving a radical equation that simplifies to a linear equation: One radical, advanced
Solving a radical equation with two radicals that simplifies to \( \sqrt{x} = a \)

Solving a radical equation that simplifies to a quadratic equation: One radical, basic

Solving an equation with a root index greater than 2: Problem type 1

9 Graphing 2.1-2.3 (28 Topics, due on 03/10/2019 11:59 PM)

Section 2.1 (13 Topics)
- Table for a linear equation
- Identifying solutions to a linear equation in two variables
- Finding a solution to a linear equation in two variables
- Graphing a linear equation of the form \( y = mx \)
- Graphing a line given its equation in slope-intercept form: Integer slope
- Graphing a line given its equation in slope-intercept form: Fractional slope
- Graphing a line given its equation in standard form
- Graphing a vertical or horizontal line
- Finding \( x \)- and \( y \)-intercepts given the graph of a line on a grid
- Finding \( x \)- and \( y \)-intercepts of a line given the equation: Basic
- Finding \( x \)- and \( y \)-intercepts of a line given the equation: Advanced
- Graphing a line given its \( x \)- and \( y \)-intercepts
- Graphing a line by first finding its \( x \)- and \( y \)-intercepts

Section 2.2 (6 Topics)
- Classifying slopes given graphs of lines
- Finding slope given the graph of a line on a grid
- Finding slope given two points on the line
- Finding the slope of horizontal and vertical lines
- Graphing a line given its slope and \( y \)-intercept
- Graphing a line through a given point with a given slope

Section 2.3 (9 Topics)
- Finding the slope and \( y \)-intercept of a line given its equation in the form \( y = mx + b \)
- Finding the slope and \( y \)-intercept of a line given its equation in the form \( Ax + By = C \)
- Graphing a line by first finding its slope and \( y \)-intercept
- Writing an equation of a line given its slope and \( y \)-intercept
- Writing an equation in slope-intercept form given the slope and a point
- Writing an equation in point-slope form given the slope and a point
- Writing an equation of a line given the \( y \)-intercept and another point
- Writing the equation of the line through two given points
- Writing the equations of vertical and horizontal lines through a given point

Spring Break 1 Topic (1 Topic, due on 03/17/2019 11:59 PM)

Section 4.1 (1 Topic)
- Understanding the product rule of exponents

10 Graphing 2.7,3.1,3.5 (17 Topics, due on 03/24/2019 11:59 PM)

Section 2.7 (8 Topics)
- Finding intercepts of a nonlinear function given its graph
- Graphing a function of the form \( f(x) = ax + b \): Integer slope
- Graphing a function of the form \( f(x) = ax + b \): Fractional slope
- Graphing an absolute value equation of the form \( y = |Ax| \)
- Graphing a function of the form \( f(x) = ax^2 \)
- Graphing a function of the form \( f(x) = ax^2 + c \)
Graphing a cubic function of the form $y = ax^3$

Graphing an absolute value equation in the plane: Basic

**Section 3.1** (3 Topics)
- Identifying solutions to a system of linear equations
- Classifying systems of linear equations from graphs
- Graphically solving a system of linear equations

**Section 3.5** (6 Topics)
- Identifying solutions to a linear inequality in two variables
- Graphing a linear inequality in the plane: Vertical or horizontal line
- Graphing a linear inequality in the plane: Slope-intercept form
- Graphing a linear inequality in the plane: Standard form
- Graphing a system of two linear inequalities: Basic
- Graphing a system of two linear inequalities: Advanced

**Section 7.4** (2 Topics)
- Graphing a function of the form $f(x) = ax^2$
- Graphing a function of the form $f(x) = ax^2 + c$

**11 Appl. 1.2,2.4,3.4,5.6** (13 Topics, due on 03/31/2019 11:59 PM)

**Section 1.2** (6 Topics)
- Solving a word problem with two unknowns using a linear equation
- Solving a word problem involving consecutive integers
- Finding the sale price given the original price and percent discount
- Finding the total cost including tax or markup
- Computing a percent mixture
- Finding simple interest without a calculator

**Section 2.4** (1 Topic)
- Application problem with a linear function: Finding a coordinate given two points

**Section 3.4** (4 Topics)
- Interpreting the graphs of two functions
- Solving a word problem involving a sum and another basic relationship using a system of linear equations
- Solving a word problem using a system of linear equations of the form $y = mx + b$
- Solving a value mixture problem using a system of linear equations

**Section 5.6** (2 Topics)
- Word problem on proportions: Problem type 1
- Word problem on proportions: Problem type 2

**12 Inequ. 1.4-1.5,1.7** (19 Topics, due on 04/07/2019 11:59 PM)

**Section R.2** (1 Topic)
- Graphing a compound inequality on the number line

**Section 1.4** (13 Topics)
- Finding the value for a new score that will yield a given mean
- Writing an inequality given a graph on the number line
- Identifying solutions to a two-step linear inequality in one variable
- Additive property of inequality with whole numbers
- Additive property of inequality with integers
- Additive property of inequality with signed fractions
Multiplicative property of inequality with integers
Multiplicative property of inequality with signed fractions
Solving a two-step linear inequality: Problem type 1
Solving a two-step linear inequality: Problem type 2
Solving a linear inequality with multiple occurrences of the variable: Problem type 1
Solving a linear inequality with multiple occurrences of the variable: Problem type 2
Solving a linear inequality with multiple occurrences of the variable: Problem type 3

Section 1.5 (3 Topics)
- Graphing a compound inequality on the number line
- Solving a compound linear inequality: Graph solution, basic
- Solving a compound linear inequality: Interval notation

Section 1.7 (3 Topics)
- Solving an absolute value inequality: Problem type 1
- Writing an absolute value inequality given a graph on the number line
- Solving an absolute value inequality: Problem type 2

Section 6.8 (5 Topics)
- Using \( i \) to rewrite square roots of negative numbers
- Simplifying a product and quotient involving square roots of negative numbers
- Adding or subtracting complex numbers
- Multiplying complex numbers
- Dividing complex numbers

Section 7.1 (5 Topics)
- Solving an equation of the form \( x^2 = a \) using the square root property
- Solving a quadratic equation using the square root property: Exact answers, basic
- Solving a quadratic equation using the square root property: Exact answers, advanced
- Completing the square
- Solving a quadratic equation by completing the square: Exact answers

Section 7.2 (4 Topics)
- Applying the quadratic formula: Exact answers
- Applying the quadratic formula: Decimal answers
- Solving a quadratic equation with complex roots
- Discriminant of a quadratic equation