Correlation of the ALEKS course Florida Math 0018 to the Florida Mathematics Competencies - Lower

Whole Numbers

- = ALEKS course topic that addresses the standard

MDECL1: Perform operations on whole numbers (with applications, including area and perimeter)
- One-digit addition with carry
- Addition of 3 or 4 one-digit numbers
- Addition without carry
- Adding a 2-digit number and a 1-digit number with carry
- Addition with carry
- Addition with carry to the hundreds place
- Addition of large numbers
- Subtracting a 1-digit number from a 2-digit number
- Subtraction without borrowing
- Adding or subtracting 10, 100, or 1000
- Subtraction with borrowing
- Subtraction with multiple regrouping steps
- Subtraction and regrouping with zeros
- Word problem with addition or subtraction of whole numbers
- One-digit multiplication
- Multiplication by 10, 100, and 1000
- Multiplication without carry
- Multiplication with carry
- Multiplication with trailing zeros: Problem type 1
- Introduction to multiplication of large numbers
- Multiplication with trailing zeros: Problem type 2
- Multiplication of large numbers
- Division facts
- Word problem with multiplication or division of whole numbers
- Word problem with multiplication and addition or subtraction of whole numbers
- Division of whole numbers given in fractional form
- Division involving zero
- Division without carry
- Division with carry
- Division with trailing zeros: Problem type 1
- Division with trailing zeros: Problem type 2
Quotient and remainder: Problem type 1
Word problem on quotient and remainder
Quotient and remainder: Problem type 2
Quotient and remainder: Problem type 3
Division involving quotients with intermediate zeros
Word problem with division of whole numbers and rounding
Perimeter of a polygon
Perimeter of a square or a rectangle
Sides of polygons having the same perimeter
Finding the missing length in a figure
Perimeter of a piecewise rectangular figure
Area of a square or a rectangle
Perimeter and area on a grid
Distinguishing between area and perimeter
Finding the side length of a rectangle given its perimeter or area
Area of a piecewise rectangular figure
Area of a parallelogram

MDECL2: Perform order of operations including absolute values
- Introduction to parentheses
- Introduction to order of operations
- Order of operations with whole numbers
- Order of operations with whole numbers and grouping symbols
- Order of operations with whole numbers and exponents: Basic
- Order of operations with whole numbers and exponents: Advanced

MDECL3: Evaluate exponents with whole numbers
- Writing expressions using exponents
- Introduction to exponents
- Power of 10: Positive exponent

MDECL12: Identify and apply the properties of real numbers
- Introduction to properties of addition
- Introduction to properties of multiplication
- Understanding the distributive property

MDECL13: Identify place value and round whole numbers
- Whole number place value: Problem type 1
- Whole number place value: Problem type 2
- Rounding to tens or hundreds
- Rounding to hundreds or thousands
- Rounding to thousands, ten thousands, or hundred thousands

MDECL14: Write the prime factorization of a number
- Prime factorization
Integers

- ALEKS course topic that addresses the standard

MDECL4: Perform operations with integers (with applications)

- Integer addition: Problem type 1
- Integer addition: Problem type 2
- Integer subtraction: Problem type 1
- Integer subtraction: Problem type 2
- Integer subtraction: Problem type 3
- Addition and subtraction with 3 integers
- Addition and subtraction with 4 or 5 integers
- Word problem with addition or subtraction of integers
- Integer multiplication and division
- Multiplication of 3 or 4 integers
- Order of operations with integers

MDECL15: Evaluate exponents with integers

- Exponents and integers: Problem type 1
- Exponents and integers: Problem type 2
- Order of operations with integers and exponents

MDECL16: Evaluate absolute value expressions

- Absolute value of a number
- Operations with absolute value

Fractions

- ALEKS course topic that addresses the standard

MDECL5: Perform operations with fractions (with applications)

- Product of a unit fraction and a whole number
- Product of a fraction and a whole number: Problem type 1
- Introduction to fraction multiplication
- Fraction multiplication
- Product of a fraction and a whole number: Problem type 2
- Multiplication of 3 fractions
- Signed fraction multiplication: Basic
- Word problem involving fractions and multiplication
- Multi-step word problem involving fractions and multiplication
- Division involving a whole number and a fraction
- Fraction division
- Signed fraction division
• Word problem involving fractions and division
• Addition or subtraction of fractions with the same denominator
• Addition or subtraction of fractions with the same denominator and simplification
• Finding the LCD of two fractions
• Addition or subtraction of unit fractions
• Introduction to addition or subtraction of fractions with different denominators
• Addition or subtraction of fractions with different denominators
• Addition and subtraction of 3 fractions with different denominators
• Signed fraction addition or subtraction: Basic
• Signed fraction subtraction involving double negation
• Addition and subtraction of 3 fractions involving signs
• Word problem involving addition or subtraction of fractions with different denominators
• Fractional part of a circle
• Addition or subtraction of mixed numbers with the same denominator
• Addition of mixed numbers with the same denominator and carry
• Subtraction of mixed numbers with the same denominator and borrowing
• Addition or subtraction of mixed numbers with different denominators and no carry or borrow
• Addition of mixed numbers with different denominators and carry
• Subtraction of mixed numbers with different denominators and borrowing
• Addition and subtraction of 3 mixed numbers with different denominators
• Word problem involving addition or subtraction of mixed numbers with different denominators
• Mixed number multiplication
• Multiplication of a mixed number and a whole number
• Division with a mixed number and a whole number
• Mixed number division
• Word problem involving multiplication or division with mixed numbers
• Exponents and fractions
• Exponents and signed fractions
• Order of operations with fractions: Problem type 1
• Order of operations with fractions: Problem type 2
• Order of operations with fractions: Problem type 3
• Complex fraction without variables: Problem type 1
• Solving a fraction word problem using a linear equation of the form \( Ax = B \)

**MDECL6: Simplify fractions**

• Understanding equivalent fractions
• Equivalent fractions
• Introduction to simplifying a fraction
• Simplifying a fraction

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### Decimals & Percents

* = ALEKS course topic that addresses the standard
MDECL7: Perform operations with decimals (with applications)

- Addition of aligned decimals
- Decimal addition with 3 numbers
- Subtraction of aligned decimals
- Decimal subtraction: Basic
- Decimal subtraction: Advanced
- Decimal addition and subtraction with 3 or more numbers
- Signed decimal addition and subtraction
- Signed decimal addition and subtraction with 3 numbers
- Word problem with addition or subtraction of 2 decimals
- Word problem with addition of 3 or 4 decimals and whole numbers
- Word problem with subtraction of a whole number and a decimal: Regrouping with zeros
- Introduction to decimal multiplication
- Multiplication of a decimal by a whole number
- Decimal multiplication: Problem type 1
- Decimal multiplication: Problem type 2
- Multiplication of a decimal by a power of ten
- Multiplication of a decimal by a power of 0.1
- Multiplication of decimals that have a product less than 0.1
- Signed decimal multiplication
- Word problem with multiplication of a decimal and a whole number
- Word problem with multiplication of two decimals
- Word problem with decimal addition and multiplication
- Whole number division with decimal answers
- Division of a decimal by a whole number
- Division of a decimal by a 1-digit decimal
- Division of a decimal by a 2-digit decimal
- Division of a decimal by a power of ten
- Division of a decimal by a power of 0.1
- Signed decimal division
- Decimal division with rounding
- Word problem with division of a decimal and a whole number
- Word problem with division of two decimals
- Word problem with decimal subtraction and division
- Squaring decimal bases: Products greater than 0.1
- Exponents and decimals: Products less than 0.1
- Order of operations with decimals: Problem type 1
- Order of operations with decimals: Problem type 2
- Order of operations with decimals: Problem type 3

MDECL8: Convert among percents, fractions, and decimals

- Writing a decimal and a fraction for a shaded region
- Converting a decimal to a proper fraction without simplifying: Basic
- Converting a decimal to a proper fraction without simplifying: Advanced
- Converting a decimal to a proper fraction in simplest form: Basic
- Converting a decimal to a proper fraction in simplest form: Advanced
- Converting a decimal to a mixed number and an improper fraction without simplifying
- Converting a decimal to a mixed number and an improper fraction in simplest form: Basic
- Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced
- Converting a fraction with a denominator of 10 or 100 to a decimal
- Converting a fraction with a denominator of 100 or 1000 to a decimal
- Converting a fraction to a terminating decimal: Basic
- Converting a fraction to a terminating decimal: Advanced
- Converting a fraction to a repeating decimal: Basic
- Converting a fraction to a repeating decimal: Advanced
- Using a calculator to convert a fraction to a rounded decimal
- Converting a mixed number to a terminating decimal: Basic
- Converting a mixed number to a terminating decimal: Advanced
- Converting a fraction or mixed number to a rounded decimal
- Converting a fraction with a denominator of 100 to a percentage
- Converting a percentage to a fraction with a denominator of 100
- Introduction to converting a percentage to a decimal
- Introduction to converting a decimal to a percentage
- Converting between percentages and decimals
- Converting between percentages and decimals in a real-world situation
- Converting a percentage to a fraction in simplest form
- Converting a fraction to a percentage: Denominator of 4, 5, or 10
- Converting a fraction to a percentage: Denominator of 20, 25, or 50
- Using a calculator to convert a fraction to a rounded percentage
- Converting a fraction to a percentage in a real-world situation

**MDECL17: Identify place value and round decimals**

- Decimal place value: Tenths and hundredths
- Decimal place value: Hundreds to ten thousandths
- Rounding decimals

**MDECL18: Solve percent equations with applications**

- Finding a percentage of a whole number
- Finding a percentage of a whole number without a calculator: Basic
- Finding a percentage of a whole number without a calculator: Advanced
- Applying the percent equation: Problem type 1
- Applying the percent equation: Problem type 2
- Finding a percentage of a total amount: Real-world situations
- Finding a percentage of a total amount without a calculator: Sales tax, commission, discount
- Writing a ratio as a percentage without a calculator
- Computing a percentage from a table of values
- Finding the rate of a tax or commission
- Finding the total amount given the percentage of a partial amount
- Finding the multiplier to give a final amount after a percentage increase or decrease
- Finding the final amount given the original amount and a percentage increase or decrease
- Finding the sale price given the original price and percent discount
• Finding the sale price without a calculator given the original price and percent discount
• Finding the total cost including tax or markup
• Finding the original amount given the result of a percentage increase or decrease
• Finding the original price given the sale price and percent discount
• Finding the percentage increase or decrease: Basic
• Finding a percentage of a total amount in a circle graph
• Computations from a circle graph
• Finding simple interest without a calculator

Geometry

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MDECL9: Solve application problems involving geometry (circumference of circle, perimeter of polygons, area of triangle, parallelograms, circle)

• Perimeter of a polygon
• Perimeter of a square or a rectangle
• Perimeter of a polygon involving mixed numbers and fractions
• Sides of polygons having the same perimeter
• Finding the missing length in a figure
• Perimeter of a piecewise rectangular figure
• Area of a square or a rectangle
• Perimeter and area on a grid
• Area of a rectangle involving fractions
• Area of a rectangle involving mixed numbers and fractions
• Distinguishing between area and perimeter
• Finding the side length of a rectangle given its perimeter or area
• Area of a piecewise rectangular figure
• Area of a triangle
• Area of a parallelogram
• Circumference of a circle
• Finding the radius or the diameter of a circle given its circumference
• Circumference ratios
• Circumference and area of a circle

MDECL19: Convert units of measurement within same measurement system

• U.S. Customary unit conversion with whole number values
• Conversions involving measurements in feet and inches
• U.S. Customary unit conversion with whole number values: Two-step conversion
• U.S. Customary unit conversion with mixed number values: One-step conversion
• U.S. Customary unit conversion with mixed number values: Two-step conversion
• U.S. Customary area unit conversion with whole number values
• Metric distance conversion with whole number values
• Metric mass or capacity conversion with whole number values
- Metric distance conversion with decimal values
- Metric conversion with decimal values: Two-step problem
- Metric area unit conversion with decimal values
- Time unit conversion with whole number values

**Pre-Algebra**

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**MDECL10: Compare magnitude of real numbers**

- Introduction to inequalities
- Ordering large numbers
- Ordering integers
- Ordering fractions with the same denominator
- Ordering fractions with the same numerator
- Using a common denominator to order fractions
- Introduction to ordering decimals
- Ordering decimals
- Ordering fractions and decimals
- Ordering real numbers

**MDECL11: Classify sets of numbers**

- Even and odd numbers
- Prime numbers
- Identifying numbers as integers or non-integers
- Identifying numbers as rational or irrational

**MDECL20: Set up and solve ratios and proportions with simple algebraic expressions**

- Writing ratios using different notations
- Writing ratios for real-world situations
- Simplifying a ratio of whole numbers: Problem type 1
- Simplifying a ratio of decimals
- Finding a unit price
- Computing unit prices to find the better buy
- Solving a word problem on proportions using a unit rate
- Finding unit rates
- Solving a proportion of the form x/a = b/c
- Word problem on proportions: Problem type 1
- Similar polygons
- Indirect measurement

**MDECL21: Solve linear equations involving the addition and multiplication property of equalities**
- Additive property of equality with whole numbers
- Additive property of equality with integers
- Multiplicative property of equality with whole numbers
- Multiplicative property of equality with integers
- Using two steps to solve an equation with whole numbers
- Additive property of equality with a negative coefficient
- Solving a two-step equation with integers
- Introduction to solving an equation with parentheses
- Introduction to solving a linear equation with several occurrences of the variable
- 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 distribution
- Additive property of equality with fractions and mixed numbers
- Additive property of equality with signed fractions
- Multiplicative property of equality with fractions
- Multiplicative property of equality with signed fractions
- Additive property of equality with decimals
- Multiplicative property of equality with decimals

**MDECL22:** Define variables and write an expression to represent a quantity in a problem

- Introduction to writing a one-step variable expression for a real-world situation
- Translating a phrase into a one-step expression
- Translating a phrase into a two-step expression
- Translating a sentence into a one-step equation
- Translating a sentence into a multi-step equation

**MDECL23:** Simplify algebraic expressions involving one variable \((2x + 5x)\)

- Multiplying a constant and a linear monomial
- Distributive property: Whole number coefficients
- Distributive property: Integer coefficients
- Combining like terms: Whole number coefficients
- Combining like terms: Integer coefficients
- Using distribution and combining like terms to simplify: Univariate
- Using distribution with double negation and combining like terms to simplify: Multivariate

**MDECL24:** Evaluate algebraic expressions (e.g., find value of \(3x\) when \(x=2\))

- Evaluating an algebraic expression: Whole number addition or subtraction
- Evaluating an algebraic expression: Whole number multiplication or division
- Evaluating an algebraic expression: Whole numbers with two operations
- Evaluating an algebraic expression: Whole number operations and exponents
- Evaluating a linear expression: Integer multiplication with addition or subtraction
- Evaluating a quadratic expression: Integers
• Evaluating a linear expression: Signed fraction multiplication with addition or subtraction
• Evaluating a linear expression: Signed decimal addition and subtraction
• Evaluating a linear expression: Signed decimal multiplication with addition or subtraction

**MDECL25: Solve formulas with given values**
• Converting between temperatures in Fahrenheit and Celsius

**MDECL26: Graph an inequality on a number line**
• Translating a sentence by using an inequality symbol
• Graphing a linear inequality on the number line
• Writing an inequality given a graph on the number line