Algebra I

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Madison High School

Textbook: Pearson Algebra 1 2015

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Description of Course: The language of Algebra will be introduced and its properties studied. The techniques used to solve equations and inequalities will be developed in great detail and real-life applications of these concepts will be explored.

SPECIFIED COURSE OBJECTIVES

- A. Students will:
 - 1. Translate verbal expressions into mathematical expressions.
 - 2. Solve problems by looking for a pattern.
 - 3. Use mathematical properties to evaluate expressions.
 - 4. Solve open sentences.
 - 5. Use and interpret stem-and-leaf plots, tables, graphs and functions.
- B. Students will:
 - 1. Display and interpret statistical data on line plots.
 - 2. Add, subtract, multiply, and divide rational numbers.

- 3. Find square roots.
- 4. Write equations and formulas.
- C. Students will:
 - 1. Solve equations using one or more operations.
 - 2. Solve problems that can be represented by equations.
 - 3. Work backward to solve problems.
 - 4. Define and study angles of triangles.
 - 5. Find measures of central tendency.
- D. Students will:
 - 1. Solve proportions.
 - 2. Find unknown measures of the sides of two similar triangles.
 - 3. Use trigonometric ratios to solve right triangles.
 - 4. Solve percent problems.
 - 5. Find the probability and odds of simple events.
 - 6. Solve problems involving direct and inverse variation.

- E. Students will:
 - 1. Graph ordered pairs, relations and equations.
 - 2. Solve problems by making a table.

- 3. Identify the domain, range, and inverse of a relation.
- 4. Determine if a relation is a function.
- 5. Write an equation to represent a relation.
- F. Students will:
 - 1. Find the slope of a line, given the coordinates of the two points.
 - 2. Write linear equations in point-slope, standard, and slope-intercept forms.
 - 3. Solve problems by using models.
 - 4. Graph linear equations.
 - 5. Use slope to determine if two lines are parallel or perpendicular.

G. Students will:

- 1. Solve inequalities.
- 2. Graph solutions of inequalities.
- 3. Graph solutions of open sentences that involve absolute values.
- 4. Solve problems by drawing a diagram.

H. Students will:

- 1. Graph systems of equations.
- 2. Solve systems of equations by various methods.
- 3. Organize data to solve problems.
- 4. Solve systems of inequalities by graphing.

I. Students will:

- 1. Solve problems by looking for a pattern.
- 2. Multiply and divide monomials.
- 3. Express numbers in scientific notation.
- 4. Add, subtract, and multiply polynomials.

J. Students will:

- 1. Find the prime factorization of integers.
- 2. Find the greatest common factors of sets of monomials.
- 3. Factor polynomials.
- 4. Solve problems by using trial-and-error methods.
- 5. Use the zero product property to solve equations.

K. Students will:

- 1. Find the equation of the axis of symmetry and the coordinates of the vertex of a parabola.
- 2. Graph quadratic and exponential functions.
- 3. Use estimation to find roots of quadratic equations by graphing.
- 4. Solve problems by looking for and using a pattern.
- 5. Solve problems involving growth and decay.
- L. Students will:
 - 1. Simplify rational expressions.
 - 2. Add, subtract, multiply and divide rational expressions.

- 3. Divide polynomials.
- 4. Solve rational equations.

M. Students will:

- 1. Use the Pythagorean Theorem to solve problems.
- 2. Simplify radical expressions.
- 3. Solve problems involving radical equations.
- 4. Solve quadratic equations by completing the square.

Grading of Course:

Quarter Grade:

At least 50% - Daily Work – Book work on paper & Math XL. Completion grade for daily work complete on paper, grade Math XL. Daily work will be accepted late with a 10% deduction for each day it is late.

Remaining portion - Test Grade - A chapter test will be taken at the end of each chapter.

Semester Grade:

42% Quarter 1

42% Quarter 2

16% Semester Final

Rules/Guidelines of the class:

Students will have respect for the classroom, its property, their fellow students and the teacher. Pop or food is not allowed in the classroom.