ODE Content Standard	Grade 7 Algebra (Part 1)
7.1 7.1.4	<u>Number and Operations</u> and <u>Algebra</u>: **Develop an understanding of operations on all rational numbers and solving linear equations.** • Apply properties of rational numbers and algebra to write and solve linear equations in one variable.
7.2	<u>Number and Operations</u>, <u>Algebra</u> and <u>Geometry</u>: **Develop an understanding of and apply proportionality, including similarity.** • Represent proportional relationships with coordinate graphs and tables, and identify unit rate as the slope of the related line. • Apply ratio and proportionality to solve problems, including percent and simple probability. • Use coordinate graphs, tables, and equations to distinguish proportional relationships from other relationships, including inverse proportionality. • Develop and use scale factors and proportional relationships to solve problems, including similarity and congruence. • Convert among different units of measurement to solve problems, including rates. • Apply scale factor to analyze how the change in one measure (e.g., length, area, volume) affects another.
8.3	<u>Geometry</u> and <u>Measurement</u>: **Analyze two- and three-dimensional spaces and figures by using distance and angle.** • Use properties of parallel lines, transversals, and angles to find missing sides and angles, and to solve problems including determining similarity or congruence of triangles. • Use models to show that the sum of the angles of any triangle is 180 degrees and apply this fact to find unknown angles. • Use models and logical arguments to show that the sum of the angles of any quadrilateral is 360 degrees, and apply this fact to find unknown angles. • Use models to explore the validity of the Pythagorean Theorem, and use it to find missing lengths. • Apply the Pythagorean Theorem to find distances in a variety of 2- and 3-dimensional contexts, including distances on coordinate graphs. • Use models and referents to explore and estimate square roots.
H.1A H.1A.1 thru H.1A.3	<u>Algebra</u> and <u>Numeracy</u>: **Demonstrate a deep understanding of real numbers and algebraic symbols by fluently creating, manipulating, computing with, and determining equivalent expressions, both numeric and symbolic.** • Compare, order, and locate real numbers on a number line. • Evaluate, compute with, and determine equivalent numeric and algebraic expressions with real numbers and variables that may also include absolute value, integer exponents, square roots, pi, and/or scientific notation. • Express square roots in equivalent radical form and their decimal approximations when appropriate.

ODE Content Standard	Grade 7 Algebra (Part 1)
H.2A H.2A.1 & H.2A.2	<u>Algebra</u>: **Use linear equations and functions to represent relationships and solve linear equations, linear inequalities, systems of linear equations, and systems of linear inequalities.** • Identify, construct, extend, and analyze linear patterns and functional relationships that are expressed contextually, numerically, algebraically, graphically, in tables, or using geometric figures. • Given a rule, a context, two points, a table of values, a graph, or a linear equation in either slope intercept or standard form, identify the slope of the line, determine the x and/or y intercept(s), and interpret the meaning of each.

It is essential that these standards be addressed in contexts that promote problem solving, reasoning, communication, making connections, and designing and analyzing representations**.**