Florida Mathematics (B.E.S.T.)

Grade 8: Access Points

Algebraic Reasoning

Generate equivalent algebraic expressions.

1 Use the properties of integer exponents and product/quotient of powers with like bases to produce equivalent algebraic expressions limited to positive exponents and monomial bases. MA.8.AR.1.AP.1

2 Use the distributive property to multiply a monomial by a linear expression. MA.8.AR.1.AP.2

3 Rewrite the sum of two linear algebraic expressions having a common whole number monomial factor as the common factor multiplied by the sum of two linear algebraic expressions. MA.8.AR.1.AP.3

Solve multi-step one-variable equations and inequalities.

1a Identify the steps to solve a given multi-step equation in one variable, with integers coefficients. Include equations with variables on both sides. MA.8.AR.2.AP.1A

1b Solve multi-step equations in one variable, with integers coefficients. Include equations with variables on both sides. MA.8.AR.2.AP.1B

2 Select a two-step inequality from a list that represents a real-world situation and use substitution to solve. MA.8.AR.2.AP.2

3 Given an equation in the form of $x^2 = p$ and $x^3 = q$, use tools to determine real solutions where p is a perfect square up to 144 and q is a perfect cube from –125 to 125. MA.8.AR.2.AP.3

Extend understanding of proportional relationships to two-variable linear equations.

1 Given a table, a graph, or equation, determine whether a linear relationship is proportional. MA.8.AR.3.AP.1

2 Given a table or graph of a linear relationship, identify the slope. MA.8.AR.3.AP.2

3 Given a table or graph of a linear relationship, identify from a list, the equation in slope-intercept form. MA.8.AR.3.AP.3

4 Graph a two-variable linear equation from a table or an equation in slope-intercept form. MA.8.AR.3.AP.4

5 Given a real-world context, identify the slope and y-intercept of a two-variable linear equation from a table, a graph or an equation in slope-intercept form. MA.8.AR.3.AP.5

Develop an understanding of two-variable systems of equations.

1a Given a system of two linear equations displayed on a graph, identify the solution of a system as the point where the two lines intersect. MA.8.AR.4.AP.1A

1b Identify the coordinates of the point of intersection for two linear equations plotted on a coordinate plane. MA.8.AR.4.AP.1B

2 Given a system of two linear equations represented graphically on the same coordinate plane, identify whether there is one solution or no solution. MA.8.AR.4.AP.2

3 Given two sets of coordinates for two lines, plot the lines on a coordinate plane and describe or select the solution to a system of linear equations. MA.8.AR.4.AP.3

Data Analysis and Probability

Represent and investigate numerical bivariate data.

1 Graph bivariate data using a scatter plot. MA.8.DP.1.AP.1

2 Given a scatter plot, identify whether the patterns of association are no association, positive association, negative association, linear or nonlinear. MA.8.DP.1.AP.2

3 Given a scatter plot with a linear association, use tools to draw or place a line of fit. MA.8.DP.1.AP.3

Represent and find probabilities of repeated experiments.

1 Use a tool (table, list or tree diagram) to record results of a repeated experiment. MA.8.DP.2.AP.1

2 Select the theoretical probability of an event related to a repeated experiment from a list. MA.8.DP.2.AP.2

3 Compare actual results of an experiment with its theoretical probability (e.g., make a statement that describes the relationship between the actual results of an experiment with its theoretical probability [e.g., more, less, same, different, equal]). MA.8.DP.2.AP.3

Functions

Define, evaluate and compare functions.

1a Given a set of ordered pairs, a table or mapping diagram identify whether the relationship is a function. MA.8.F.1.AP.1A

1b Given a set of ordered pairs, a table or mapping diagram identify the domain and range of the relation. MA.8.F.1.AP.1B

2 Given a function displayed on a graph or an equation, identify whether the function is a linear function. MA.8.F.1.AP.2

3 Given a functional relationship displayed as a graph, identify where the function is increasing, decreasing or constant. MA.8.F.1.AP.3

Geometric Reasoning

Develop an understanding of the Pythagorean Theorem and angle relationships involving triangles.

1 Find the hypotenuse of a two-dimensional right triangle using the Pythagorean Theorem. MA.8.GR.1.AP.1

2 Given the Pythagorean Theorem, determine lengths/distances between two points in a coordinate system by forming right triangles, with natural number side lengths. MA.8.GR.1.AP.2

3a Measure the sides of triangles to establish facts about the Triangle Inequality Theorem (i.e., the sum of two side lengths is greater than the third side). MA.8.GR.1.AP.3A

3b Substitute the side lengths of a given figure into the Pythagorean Theorem to determine if a right triangle can be formed. MA.8.GR.1.AP.3B

4 Identify supplementary, complementary, vertical or adjacent angle relationships. MA.8.GR.1.AP.4

5 Given an image, solve simple problems involving the relationships of interior and exterior angles of a triangle. MA.8.GR.1.AP.5

6 Use tools to calculate the sum of the interior angles of regular polygons when given the formula. MA.8.GR.1.AP.6

Understand similarity and congruence using models and transformations.

1 Given two figures on a coordinate plane, identify if the image is translated, rotated or reflected. MA.8.GR.2.AP.1

2 Given a preimage and image describe the effect the dilation has on the two figures. MA.8.GR.2.AP.2

3 Identify the coordinates of the vertices of a common polygon after a single translation, rotation or dilation on the coordinate plane. MA.8.GR.2.AP.3

4 Use tools to solve mathematical problems using proportions between similar triangles. MA.8.GR.2.AP.4

Number Sense and Operations

Solve problems involving rational numbers, including numbers in scientific notation, and extend the understanding of rational numbers to irrational numbers.

1 Locate approximations of irrational numbers on a number line. MA.8.NSO.1.AP.1

2 Use appropriate tools to plot, order, and compare simple square roots and cube roots for quantities less than 100. MA.8.NSO.1.AP.2

3 Use the properties of integer exponents and product/quotient of powers with like bases to produce equivalent expressions. MA.8.NSO.1.AP.3

4 Multiply a single-digit number by the power of 10 using a calculator. Identify whether the number in scientific notation represents a very large or very small quantity. MA.8.NSO.1.AP.4

5 Perform operations with numbers expressed in scientific notation using a calculator. MA.8.NSO.1.AP.5

6 Given a real-world problem, perform operations with numbers expressed in scientific notation using a calculator and interpret the answer in context. MA.8.NSO.1.AP.6

7 Use tools to solve multi-step mathematical problems, with four or fewer steps, involving the order of operations with rational numbers including exponents and perfect squares and/or square roots. MA.8.NSO.1.AP.7