Pecos Valley Mathematics Outline—Course 3

NM State Standards

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| Standard | Unit  **Bold—primary**  Non-bold—secondary  TESTED |
| **9-12.A.1.1** Use the special symbols of mathematics correctly and precisely. (Function notation f(g(x)) and F(x), interval notation, set builder notation, standard deviation, µ,∞,∆, log, ln and ex ) |  |
| **9-12.A.1.2** Classify and use equivalent representations of natural, whole, integer, rational, irrational numbers and **complex numbers**, and choose which type of number is appropriate in a given context. |  |
| **9-12.A.1.5** Use a variety of computational methods, recognize when an estimate or approximation is more appropriate than an exact answer, and understand the limits on precision of approximations. |  |
| **9-12.A.1.13** Simplify rational expressions by factoring and reducing to lowest terms. |  |
| **9-12.A.1.16** Factor polynomials of various types (e.g., difference of squares, perfect square trinomials, sum and difference of cubes). [Introduced in course 2/mastered in 3] |  |
| **9-12.A.1.18** Use the four basic operations (+, -, ×, ÷) with linear, polynomial, and rational expressions in contextual situations. |  |
| **9-12.A.2.8** Graph a quadratic function and understand the relationship between its real zeros and the x-intercepts of its graph. (Quadratics—axis of symmetry, applications of minimum and maximum and zeros) |  |
| **9-12.A.2.11** Use the quadratic formula and factoring techniques to determine whether the graph of a quadratic function will intersect the *x*-axis in zero, one, or two points (include quadratic functions that represent real phenomena). |  |
| **9-12.A.2.12** Explain the meaning of the real and complex roots of quadratic functions in contextual situations. |  |
| **9-12.G.1.9** Write geometric proofs, including proofs by contradiction, and perform and explain basic geometric constructions related to: theorems involving the properties of parallel and perpendicular lines, circles, and polygons; theorems involving complementary, supplementary, and congruent angles; theorems involving congruence and similarity; and the Pythagorean theorem. |  |
| **9-12.G.1.10** Recognize that there are geometries, other than Euclidean geometry, in which the parallel postulate is not true. |  |
| **9-12.D.2.3** Display the distribution of univariate data, describe its shape using appropriate summary statistics, and understand the distinction between a statistic and a parameter. |  |
| **9-12.D.2.4** Calculate and apply measures of variability (e.g., standard deviation). |  |
| **9-12.D.2.6** Describe the characteristics of a normal distribution. |  |
| **9-12.D.2.7** Compare and draw conclusions between two or more sets of univariate data using basic data analysis techniques and summary statistics. |  |
| **9-12.D.2.8** Describe the shape of a scatterplot. (to include cubic and sinusoidal) |  |
| **9-12.D.2.11** Describe the relationship between two variables and determine its strength with and without technological tools. |  |
| **9-12.D.2.13** Use the results of simulations to explore the variability of sample statistics from a known population and construct sampling distributions. |  |
| **9-12.D.2.14** Describe how sample statistics, including the law of large numbers, reflect the values of population parameters and use sampling distributions as the basis for informal inference. |  |
| **9-12.D.2.15** Evaluate published reports that are based on data by examining the design of the study, the appropriateness of the data |  |