CORE@TCA SIDE BY SIDE STANDARDS
Algebra I/Algebra II/Geometry
Essential Standards
Mathematics
Based on State Key Content Standards compiled by the Pulliam Group

Algebra I	Algebra II	Geometry
1.1 Use properties of numbers to demonstrate if assertions are true or false *1.2 Use operations like taking the opposite, finding the reciprocal, and taking a root. They understand and use the rules of exponents (1)* *1.3 Solve equations and inequalities involving absolute values (1) not on STAR* *1.4 Simplify expressions before solving equations and inequalities in one variable (2)* *1.5 Solve multi-step equations and inequalities with one variable; justify each step (1)* *1.6 Graph a linear equation and compute the x- and y-intercepts (2)* *1.7 Verify that a point lies on a line; derive linear equations (1)* *1.8 Understand the concepts of parallel lines and how their slopes are related (1)* *1.9 Solve a system of two linear equations in two variables and interpret them graphically (1)* *1.10 Add, subtract, multiply, and divide monomials and polynomials (multi-step) (1)* *1.15 Apply algebraic techniques to solve rate, work, percent mixture problems (1) not on STAR*	*1. Solve equations and inequalities by substitution, with graphs or matrices* 2. *Solve systems of linear equations and inequalities by substitution, with graphs or matrices* 3. Use long division of polynomials 4. Factor polynomials representing the difference of squares, perfect square trinomials, sum and difference of two cubes 5. Plot complex numbers as points in the plane 6. Add, subtract, multiply, and divide complex numbers 7. Add, subtract, multiply, divide, reduce, and evaluate rational expressions with monomial and polynomial denominators and simplify complicated rational expressions 8. Solve and graph quadratic equations by factoring, completing the square, or using the quadratic formula; apply techniques to word problems, complex number system 9. Explain the effect that changing a coefficient has on the graph of quadratic functions 10. Graph quadratic functions; determine the maxima, minima, and zeros of the function 11.1 Solve problems involving logarithms and exponents; understand the inverse relationship 11.2 Judge the validity of an argument according to whether the properties of real numbers, exponents, and logarithms have been applied correctly at each step 12. Know the laws of fractional exponents, understand exponential functions, and use in problems involving exponential growth and decay 14. Use the properties of logarithms to simplify logarithmic numeric expressions and to identify their approximate values 15. Determine whether an algebraic statement involving rational expressions, radical expressions, logarithmic or exponential functions is sometimes true, always true, or never true 18. Use counting principles to compute combination and permutations 19. Use combinations and permutations to compute probabilities 20. Use the binomial theorem to expand binomial expressions raised to positive integer powers	1. Identify and give examples of undefined terms, axioms, theorems, and inductive, deductive reasoning 2. Write geometric proofs, including proofs by contradiction 3. Construct and judge the validity of a logical argument; give counterexamples 4. Prove basic theorems involving congruence and similarity 7. Prove and use theorems involving parallel lines cut by a traversal, properties of quadrilaterals, and the properties of circles *8. Derive and solve problems involving perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures* 10. Compute the area of: triangles, rectangles, rhombi, parallelograms, and trapezoids *11. Determine how change in dimension affects perimeter, area, and volume* 12. Use measures of sides and angles to classify figures and solve problems *14. Prove the Pythagorean theorem* *15. Use Pythagorean theorem to find distance and length of the side of a right triangle* 16. Perform basic constructions with a straightedge and compass 17. Prove theorems by using coordinate geometry, including midpoint of line segment, distance formula, and various forms of equations of lines and circles 18. Know the definitions of the basic trigonometric functions defined by the angles of a right triangle 19. Use trigonometric functions to solve for an unknown length of a side of a right triangle, given an angle and a length of a side 21. Prove and solve problems among chords, secants, tangents, inscribed angles 22. Know the effect of rigid notions on figures in the coordinate plane and space, including rotations, translations, and reflections

Italicized items represent standards on the High School Exit Exam with the number of items represented on the exam in parentheses. All items are on STAR except where noted