TSI Tutorials are designed based off of TSI test blueprints with consideration of the TSI assessment manual to provide students a more successful and less stressful preparation effort as they work to demonstrate their college readiness on the TSI Assessment.

TSI Mathematics, Writing, and Reading Tutorials offer targeted instruction, practice, and review. Students engage with the content in an interactive, feedback-rich environment as they progress through TSI test aligned modules. Students practice skills essential to the test they're preparing for and build the depth of knowledge, confidence, and higher order skills required to demonstrate mastery when put to the test.

In each module, the Learn It and Try It make complex ideas accessible to students through focused content, guided analysis, and practice with personalized feedback so students are empowered to increase their Exam Readiness. The Review It offers an engaging and high impact video summary of key concepts and important to grasp connections. The Test It assesses students' mastery of the module's concepts, providing granular performance data to students and teachers, linking a student's performance to TSI strand descriptions and score ranges. To help students focus on the content most relevant to them, unit-level pretests and posttests can quickly identify where students are ready for test day and where they still need to review and practice.

This Tutorial is aligned with TSI Assessment Blueprints and Strand descriptions for Math and ELA test sections.

1. MEASUREMENT

- **MONITORING PRECISION AND ACCURACY**
  - **IV.B.1** *Convert from one measurement system to another.*
  - **IV.A.1** *Select or use the appropriate type of unit for the attribute being measured.*
  - **X.B.1** *Use multiple representations to demonstrate links between mathematical and real world situations.*

- **UNIT CONVERSIONS**
  - **IV.B.2** *Convert within a single measurement system.*

2. OPERATIONS WITH FRACTIONS, DECIMALS, AND WHOLE NUMBERS

- **DIVIDING FRACTIONS**
  - **I.B.1** *Perform computations with real and complex numbers.*

- **DIVIDING MULTI-DIGIT WHOLE NUMBERS**
  - **I.B.1** *Perform computations with real and complex numbers.*

- **DECIMAL OPERATIONS**
  - **I.B.1** *Perform computations with real and complex numbers.*

3. SQUARE ROOTS AND COMPARING NUMBERS

- **SIMPLIFYING SQUARE ROOTS**
  - **II.B.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions (e.g., polynomials, radicals, rational expressions).*

- **INEQUALITIES AND COMPARISON**
  - **I.A.1** *Compare real numbers.*

4. ADDING AND SUBTRACTING RATIONAL NUMBERS

- **ADDING RATIONAL NUMBERS**
  - **I.B.1** *Perform computations with real and complex numbers.*

- **SUBTRACTING RATIONAL NUMBERS**
  - **I.B.1** *Perform computations with real and complex numbers.*

- **USING PROPERTIES TO ADD AND SUBTRACT RATIONAL NUMBERS**
  - **I.B.1** *Perform computations with real and complex numbers.*

5. MULTIPLYING AND DIVIDING RATIONAL NUMBERS

- **MULTIPLYING RATIONAL NUMBERS**
  - **I.B.1** *Perform computations with real and complex numbers.*

- **DIVIDING RATIONAL NUMBERS**
  - **I.B.1** *Perform computations with real and complex numbers.*

- **USING PROPERTIES TO MULTIPLY AND DIVIDE RATIONAL NUMBERS**
  - **I.B.1** *Perform computations with real and complex numbers.*

- **USING OPERATIONS ON RATIONAL NUMBERS TO SOLVE PROBLEMS**
  - **I.B.1** *Perform computations with real and complex numbers.*

6. ALGEBRAIC EXPRESSIONS

- **EVALUATING EXPRESSIONS**
  - **II.A.1** *Explain and differentiate between expressions and equations using words such as "solve", "evaluate", and "simplify".*

- **EQUIVALENT EXPRESSIONS**
  - **II.A.1** *Explain and differentiate between expressions and equations using words such as "solve", "evaluate", and "simplify".*

- **FORMULATING AND SIMPLIFYING ALGEBRAIC EXPRESSIONS**
  - **II.D.1** *Interpret multiple representations of equations and relationships.*
  - **II.D.2** *Translate among multiple representations of equations and relationships.*
  - **IX.A.1** *Use mathematical symbols, terminology, and notation to represent given and unknown information in a problem.*
  - **IX.B.1** *Model and interpret mathematical ideas and concepts using multiple representations.*
  - **IX.C.2** *Create and use representations to organize, record, and communicate mathematical ideas.*
  - **X.B.1** *Use multiple representations to demonstrate links between mathematical and real world situations.*

- **OPERATIONS WITH RATIONAL EXPRESSIONS**
  - **II.B.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions (e.g., polynomials, radicals, rational expressions).*

7. SOLVING EQUATIONS AND INEQUALITIES

- **SOLUTIONS OF EQUATIONS AND INEQUALITIES**
  - **II.A.1** *Explain and differentiate between expressions and equations using words such as "solve", "evaluate", and "simplify".*

- **ONE-STEP EQUATIONS AND INEQUALITIES**
  - **II.C.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to solve equations, inequalities, and systems of linear equations.*
  - **II.C.2** *Explain the difference between the solution set of an equation and the solution set of an inequality.*

8. MULTI-STEP EQUATIONS AND INEQUALITIES

- **SOLVING MULTI-STEP EQUATIONS**
  - **VIII.C.1** *Formulate a solution to a real world situation based on the solution to a mathematical problem.*

- **SOLVING MULTI-STEP INEQUALITIES**
  - **II.C.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to solve equations, inequalities, and systems of linear equations.*
  - **II.C.2** *Explain the difference between the solution set of an equation and the solution set of an inequality.*
  - **IX.A.3** *Use mathematics as a language for reasoning, problem solving, making connections, and generalizing.*
  - **IX.B.2** *Summarize and interpret mathematical information provided orally, visually, or in written form within the given context.*
  - **X.A.1** *Connect and use multiple strands of mathematics in situations and problems.*
  - **VIII.C.1** *Formulate a solution to a real world situation based on the solution to a mathematical problem.*

- **AXIOMS OF EQUALITY**
  - **II.B.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions (e.g., polynomials, radicals, rational expressions).*
  - **II.C.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to solve equations, inequalities, and systems of linear equations.*

9. APPLYING EQUATIONS AND INEQUALITIES

- **FORMULATING AND SOLVING EQUATIONS FROM WORD PROBLEMS**
  - **II.D.2** *Translate among multiple representations of equations and relationships.*
  - **IX.A.1** *Use mathematical symbols, terminology, and notation to represent given and unknown information in a problem.*
  - **VIII.A.1** *Analyze given information.*
  - **VIII.A.2** *Formulate a plan or strategy.*
  - **VIII.A.3** *Determine a solution.*

- **FORMULATING AND SOLVING INEQUALITIES FROM WORD PROBLEMS**
  - **II.C.2** *Explain the difference between the solution set of an equation and the solution set of an inequality.*
  - **VII.C.1** *Apply known function models.*
  - **VIII.A.2** *Formulate a plan or strategy.*
  - **IX.A.1** *Use mathematical symbols, terminology, and notation to represent given and unknown information in a problem.*
  - **VIII.A.1** *Analyze given information.*
  - **VIII.A.3** *Determine a solution.*
  - **II.C.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to solve equations, inequalities, and systems of linear equations.*

10. LINEAR EQUATIONS AND FUNCTIONS

- **SLOPE**

- **VII.B.1** *Understand and analyze features of a function.*

- **SLOPE-INTERCEPT FORM OF A LINEAR EQUATION**
  - **VII.B.1** *Understand and analyze features of a function.*
  - **VII.C.1** *Apply known function models.*
  - **II.D.2** *Translate among multiple representations of equations and relationships.*

- **POINT-SLOPE FORM OF A LINEAR EQUATION**
  - **VII.B.1** *Understand and analyze features of a function.*
  - **VII.C.1** *Apply known function models.*

- **GRAPHING LINEAR FUNCTIONS**
  - **II.D.2** *Translate among multiple representations of equations and relationships.*
  - **VII.B.1** *Understand and analyze features of a function.*

11. SYSTEMS OF LINEAR EQUATIONS

- **SOLVING SYSTEMS OF LINEAR EQUATIONS: SUBSTITUTION**
  - **II.C.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to solve equations, inequalities, and systems of linear equations.*

- **SOLVING SYSTEMS OF LINEAR EQUATIONS: ELIMINATION**
  - **II.C.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to solve equations, inequalities, and systems of linear equations.*

12. OPERATIONS WITH POLYNOMIALS

- **ADDITION AND SUBTRACTION OF POLYNOMIALS**
  - **II.B.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions (e.g., polynomials, radicals, rational expressions).*

- **MULTIPLICATION OF POLYNOMIALS**
  - **II.B.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions (e.g., polynomials, radicals, rational expressions).*

- **DIVISION OF POLYNOMIALS**
  - **II.B.1** *Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions (e.g., polynomials, radicals, rational expressions).*

13. QUADRATIC FUNCTIONS AND COMPLEX NUMBERS

- **QUADRATIC FUNCTIONS**
  - **VII.B.1** *Understand and analyze features of a function.*
  - **VII.C.1** *Apply known function models.*

- **GRAPHING AND WRITING QUADRATIC FUNCTIONS**
  - **VII.B.1** *Understand and analyze features of a function.*
  - **VII.C.1** *Apply known function models.*

- **QUADRATIC FORMULA**

- II.A.1 *Explain and differentiate between expressions and equations using words such as "solve", "evaluate", and "simplify".*
- VIII.C.1 *Formulate a solution to a real world situation based on the solution to a mathematical problem.*
- II.D.1 *Interpret multiple representations of equations and relationships.*
- II.D.2 *Translate among multiple representations of equations and relationships.*

- **COMPLEX NUMBERS**
  - I.A.2 *Define and give examples of complex numbers.*
  - I.B.1 *Perform computations with real and complex numbers.*

14. EXPONENTIAL FUNCTIONS

- **EXPONENTIAL FUNCTIONS**
  - VII.B.1 *Understand and analyze features of a function.*
  - II.D.1 *Interpret multiple representations of equations and relationships.*
  - VII.C.1 *Apply known function models.*

- **EXPONENTIAL GROWTH AND DECAY**
  - II.D.1 *Interpret multiple representations of equations and relationships.*
  - II.D.2 *Translate among multiple representations of equations and relationships.*
  - IX.A.1 *Use mathematical symbols, terminology, and notation to represent given and unknown information in a problem.*
  - VII.B.1 *Understand and analyze features of a function.*
  - VII.C.1 *Apply known function models.*
  - VIII.C.1 *Formulate a solution to a real world situation based on the solution to a mathematical problem.*

15. WORKING WITH FUNCTIONS

- **LINEAR VERSUS NONLINEAR FUNCTIONS**
  - VII.A.2 *Recognize and distinguish between different types of functions.*
  - VII.B.1 *Understand and analyze features of a function.*
  - II.D.1 *Interpret multiple representations of equations and relationships.*
  - II.D.2 *Translate among multiple representations of equations and relationships.*
  - VII.C.1 *Apply known function models.*

- **MULTIPLE REPRESENTATIONS OF FUNCTIONS**
  - II.D.1 *Interpret multiple representations of equations and relationships.*
  - II.D.2 *Translate among multiple representations of equations and relationships.*
  - VII.C.1 *Apply known function models.*

16. DRAWING, CONSTRUCTING, AND EXPLORING GEOMETRIC FIGURES

- **POINTS, RAYS, LINE SEGMENTS, LINES, AND FIGURES**
  - III.A.2 *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*

- **SCALE DRAWINGS**
  - III.C.3 *Make connections between geometry and measurement.*
  - IV.C.3 *Determine indirect measurements of figures using scale drawings, similar figures, the Pythagorean Theorem, and basic trigonometry.*

- **GEOMETRIC DRAWINGS**
  - III.C.3 *Make connections between geometry and measurement.*

17. AREA AND PERIMETER

- **PERIMETER ON THE COORDINATE PLANE**
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.1** *Find the perimeter and area of two-dimensional figures.*
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*

- **AREA OF POLYGONS**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.1** *Find the perimeter and area of two-dimensional figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*

18. CONGRUENCE, SIMILARITY, AND TRANSFORMATIONS

- **DILATIONS, TRANSLATIONS, ROTATIONS, AND REFLECTIONS**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*
  - **III.B.1** *Identify and apply transformations to figures.*
  - **III.B.3** *Use congruence transformations and dilations to investigate congruence, similarity, and symmetries of plane figures.*

- **TRIANGLE SIMILARITY**
  - **IV.C.3** *Determine indirect measurements of figures using scale drawings, similar figures, the Pythagorean Theorem, and basic trigonometry.*
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*
  - **III.B.1** *Identify and apply transformations to figures.*

- **SIMILARITY OF OTHER POLYGONS**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*
  - **IV.C.3** *Determine indirect measurements of figures using scale drawings, similar figures, the Pythagorean Theorem, and basic trigonometry.*
  - **III.B.1** *Identify and apply transformations to figures.*

19. RIGHT TRIANGLES

- **PYTHAGOREAN THEOREM**
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*
  - **III.A.3** *Recognize and apply right triangle relationships including basic trigonometry.*
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.3** *Determine indirect measurements of figures using scale drawings, similar figures, the Pythagorean Theorem, and basic trigonometry.*
  - **III.D.1** *Make and validate geometric conjectures.*

- **PYTHAGOREAN TRIPLES**
  - **III.A.3** *Recognize and apply right triangle relationships including basic trigonometry.*
  - **III.C.1** *Make connections between geometry and algebra.*

- **PROBLEM SOLVING WITH RIGHT TRIANGLES**

  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.1** *Find the perimeter and area of two-dimensional figures.*
  - **III.A.3** *Recognize and apply right triangle relationships including basic trigonometry.*
  - **IV.C.3** *Determine indirect measurements of figures using scale drawings, similar figures, the Pythagorean Theorem, and basic trigonometry.*

- **SPECIAL RIGHT TRIANGLES**
  - **III.A.3** *Recognize and apply right triangle relationships including basic trigonometry.*

20. INTRODUCTION TO TRIGONOMETRY

- **TRIGONOMETRIC RATIOS**
  - **III.A.3** *Recognize and apply right triangle relationships including basic trigonometry.*
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.3** *Determine indirect measurements of figures using scale drawings, similar figures, the Pythagorean Theorem, and basic trigonometry.*

- **RADIANS AND THE UNIT CIRCLE**
  - **III.A.3** *Recognize and apply right triangle relationships including basic trigonometry.*

21. SURFACE AREA

- **SURFACE AREA OF PRISMS AND PYRAMIDS**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.2** *Determine the surface area and volume of three-dimensional figures.*

- **SURFACE AREA OF CYLINDERS AND CONES**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.2** *Determine the surface area and volume of three-dimensional figures.*

- **SURFACE AREA OF COMPOSITE SOLIDS**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **IX.B.1** *Model and interpret mathematical ideas and concepts using multiple representations.*
  - **IX.C.2** *Create and use representations to organize, record, and communicate mathematical ideas.*
  - **X.B.1** *Use multiple representations to demonstrate links between mathematical and real world situations.*
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.2** *Determine the surface area and volume of three-dimensional figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*

22. VOLUME

- **VOLUME OF PRISMS, CUBES, AND PYRAMIDS**
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.2** *Determine the surface area and volume of three-dimensional figures.*

- **VOLUME OF CYLINDERS AND CONES**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **IV.C.2** *Determine the surface area and volume of three-dimensional figures.*

- **VOLUME OF COMPOSITE SOLIDS**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.2** *Determine the surface area and volume of three-dimensional figures.*
  - **III.D.1** *Make and validate geometric conjectures.*

23. SPHERES AND CHANGING DIMENSIONS

- **SURFACE AREA AND VOLUME OF SPHERES**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.C.1** *Make connections between geometry and algebra.*
  - **IV.C.2** *Determine the surface area and volume of three-dimensional figures.*

- **EFFECTS OF CHANGING DIMENSIONS ON PERIMETER, AREA, AND VOLUME**
  - **III.A.1** *Identify and represent the features of plane and space figures.*
  - **III.A.2** *Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties.*
  - **IV.C.1** *Find the perimeter and area of two-dimensional figures.*
  - **IX.B.2** *Summarize and interpret mathematical information provided orally, visually, or in written form within the given context.*
  - **IV.C.2** *Determine the surface area and volume of three-dimensional figures.*

24. INTRODUCTION TO STATISTICS

- **BOX PLOTS**
  - **VI.B.2** *Select and apply appropriate visual representations of data.*

- **DOT PLOTS AND HISTOGRAMS**
  - **VI.B.2** *Select and apply appropriate visual representations of data.*

- **DATA ANALYSIS**
  - **IX.B.1** *Model and interpret mathematical ideas and concepts using multiple representations.*
  - **IX.C.2** *Create and use representations to organize, record, and communicate mathematical ideas.*
  - **X.B.1** *Use multiple representations to demonstrate links between mathematical and real world situations.*
  - **VI.B.3** *Compute and describe summary statistics of data.*
  - **IV.D.1** *Compute and use measures of center and spread to describe data.*
  - **VI.B.2** *Select and apply appropriate visual representations of data.*

25. MODELING DATA

- **SCATTERPLOTS**
  - **VI.B.2** *Select and apply appropriate visual representations of data.*

- **SCATTERPLOTS AND MODELING**
  - **VII.C.2** *Develop a function to model a situation.*

- **QUADRATIC AND EXPONENTIAL MODELS**

- **VII.C.2** *Develop a function to model a situation.*

26. PROBABILITY

- **INTRODUCTION TO PROBABILITY**
  - **V.A.1** *Determine the nature and the number of elements in a finite sample space.*
  - **V.B.1** *Compute and interpret the probability of an event and its complement.*
  - **V.B.2** *Compute and interpret the probability of conditional and compound events.*

- **CONDITIONAL PROBABILITY**
  - **V.B.2** *Compute and interpret the probability of conditional and compound events.*
  - **V.B.1** *Compute and interpret the probability of an event and its complement.*

- **GEOMETRIC PROBABILITIES**
  - **III.C.2** *Make connections between geometry, statistics, and probability.*
  - **IV.D.2** *Apply probabilistic measures to practical situations to make an informed decision.*
  - **V.B.1** *Compute and interpret the probability of an event and its complement.*
  - **V.B.2** *Compute and interpret the probability of conditional and compound events.*

27. LOGIC

- **LANGUAGE OF LOGIC**
  - **VIII.B.1** *Develop and evaluate convincing arguments.*
  - **IX.A.3** *Use mathematics as a language for reasoning, problem solving, making connections, and generalizing.*
  - **X.A.1** *Connect and use multiple strands of mathematics in situations and problems.*
  - **VIII.B.2** *Use various types of reasoning.*

- **CONDITIONAL STATEMENTS AND SYLLOGISMS**
  - **VIII.B.1** *Develop and evaluate convincing arguments.*
  - **VIII.B.2** *Use various types of reasoning.*

- **CONVERSE, INVERSE, AND CONTRAPOSITIVE STATEMENTS**
  - **VIII.B.2** *Use various types of reasoning.*