Mathematics (9-12)
Five Town Graduation Standards and Expected Outcomes

Common Core State Standards – Key
APR - Arithmetic with Polynomials & Rational Expressions
BF - Building Functions
C - Circles
CED - Creating Equations
CN - Complex Number System
CO - Congruence
CP - Conditional Probability & Rules of Probability
GPE - Expressing Geometric Properties with Exponents
GMD - Geometric Measurement & Dimension
HSA - High School Algebra
HSF - High School Functions
HSG - High School Geometry
HSN - High School Numbers
HSS - High School Statistics and Probability
IC - Making Inferences & Justifying Conclusions
ID - Interpreting Categorical & Quantitative Data
IF - Interpreting Functions
LE - Linear, Quadratic, & Exponential Models
MG - Modeling with Geometry
Q - Quantities
REI - Reasoning with Equations and Inequalities
RN - Real Number System
SRT - Similarity, Right Triangles, & Trigonometry
SSE - Seeing Structure in Equations

Mathematics Graduation Standard 1

NUMBER AND QUANTITY: Reason and model quantitatively, using properties, units, and number systems to reason and solve problems.

9-12 Expected Outcomes

A. Extend the properties of exponents to rational exponents. (HSN.RN.A)

B. Use the properties of rational and irrational numbers. (HSN.RN.B)

C. Reason quantitatively and use units to solve problems. (HSN.Q.A)

ALGEBRA: Interpret, represent, and create algebraic expressions and solve algebraic sentences.

9-12 Expected Outcomes

A. Interpret the structure of expressions. (HSA.SSE.A)

B. Write expressions in equivalent forms to solve problems. (HSA.SSE.B)

C. Perform operations on polynomials. (HSA.APR.A)

D. Rewrite rational expressions. (HSA.APR.D.6)

E. Use polynomial identities such as in factoring and the zero product property to solve problems. (HAS.APR.C.4)

F. Create equations that describe numbers or relationships. (HSA.CED.A)

G. Understand solving equations as a process of reasoning and explain the reasoning. (HSA.REI.A)

H. Solve equations in one variable and represent the solution graphically. (HSA.REI.B,D)

I.   Solve inequalities in one variable and represent the solution graphically. (HSA.REI.B,D)

J. Solve systems of equations in multiple ways. (HSA.REI.C.5-7)

K. Solve systems of inequalities graphically. (HAS.REI.D)

Mathematics Graduation Standard 3

FUNCTIONS: Interpret, analyze, construct, and evaluate functions.

9-12 Expected Outcomes

A. Understand the concept of a function and use functional notation. (HSF.IF.A)

B. Interpret functions that arise in applications in terms of the context. (HSF.IF.B)

C. Analyze functions using different representations. (HSF.IF.C.7.A-C, E, 8-9)

D. Build a function that models a relationship between two quantities. (HSF.BF.A.1A-B, 2)

E. Interpret expressions for functions in terms of the situation they model. (HSF.LE.B)

Mathematics Graduation Standard 4

GEOMETRY: Prove, understand, and model geometric concepts, theorems, and constructions to solve problems.

9-12 Expected Outcomes

A. Execute transformations in the coordinate plane. (HSG.CO.A)

B. Understand congruence in terms of rigid motions. (HSG.CO.B)

C. Complete proofs about geometric relationships. (HSG.CO.C, HSG.SRT.B, HSG.GPE.B)

D. Make geometric constructions. (HSG.CO)

E. Understand similarity in terms of similarity transformations. (HSG.SRT.A)

F. Define trigonometric ratios and solve problems involving right triangles. (HSG.SRT.C)

G. Understand and apply theorems about circles. (HSG.C.A.1-3)

H. Find arc lengths and areas of sectors of circles. (HSG.C.B)

I. Use volume formulas to solve problems. (HSG.GMD.A.1, 3)

J. Visualize relationships between two-dimensional and three-dimensional objects. (HSG.GMD.B.4)

K. Apply geometric concepts in modeling situations. (HSG.MG.A)

Mathematics Graduation Standard 5

STATISTICS AND PROBABILITY: Interpret, infer and apply statistics and probability to analyze data and reach justifiable conclusions.

9-12 Expected Outcomes

A. Interpret linear models. (HSS.ID.C)

B. Understand independence and conditional probability and use them to interpret data. (HSS.CP.A)

C. Use the rules of probability to compute probabilities of compound events in a uniform probability model. (HSS.CP.B.6, 7)