Common Core: Mathematics Standards

	Virtual Business - Accounting	Virtual Business - Fashion	Virtual Business - Hotel	Virtual Business - Management	Virtual Business - Personal Finance	Virtual Business - Restaurant	Virtual Business - Retailing	Virtual Business - Sports & Entertainment
High School: Number & Quantity								
The Real Number System								
Extend the properties of exponents to rational exponents					✓			
Classify numbers as rational or irrational								
Quantities								
Reason quantitatively and use units to solve problems	✓	✓	✓	✓	✓	✓	✓	✓
The Complex Number System								
Perform arithmetic operations with complex numbers								
Represent complex numbers and their operations on the complex plane								
Use complex numbers in polynomial identities and equations								
Vector and Matrix Quantities								
Represent and model with vector quantities.								
Perform operations on vectors.								
Perform operations on matrices and use matrices in applications.								
Mathematical Practices								
Make sense of problems and persevere in solving them	✓	✓	✓	✓	✓	✓	✓	✓
Reason abstractly and quantitatively.	✓	✓	✓	✓	✓	✓	✓	✓
Construct viable arguments and critique the reasoning of others.								
Model with mathematics.	✓	✓	✓	✓	✓	✓	✓	✓
Use appropriate tools strategically.	✓	✓	✓	✓	✓	✓	✓	✓
Attend to precision.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and make use of structure.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and express regularity in repeated reasoning.	✓	✓	✓	✓	✓	✓	✓	✓
High School: Algebra								
Seeing Structure in Expressions								
Interpret the structure of expressions	✓	✓	✓	✓	✓	✓	✓	✓
Write expressions in equivalent forms to solve problems	✓	✓	✓	✓	✓	✓	✓	✓
Arithmetic with Polynomials and Rational Functions								
Perform arithmetic operations on polynomials	✓	✓	✓	✓			✓	
Understand the relationship between zeros and factors of polynomials								
Use polynomial identities to solve problems								
Rewrite rational functions								
Creating Equations								
Create equations that describe numbers or relationships	✓	✓	✓	✓	✓	✓	✓	✓
Reasoning with Equations and Inequalities								
Understand solving equations as a process of reasoning and explain the reasoning	✓	✓	✓	✓	✓	✓	✓	✓
Solve equations and inequalities in one variable	✓	✓	✓	✓	✓	✓	✓	✓
Solve systems of equations								
Represent and solve equations and inequalities graphically								
Mathematical Practices								
Make sense of problems and persevere in solving them.	✓	✓	✓	✓	✓	✓	✓	✓
Reason abstractly and quantitatively.	✓	✓	✓	✓	✓	✓	✓	✓
Construct viable arguments and critique the reasoning of others.								
Model with mathematics.	✓	✓	✓	✓	✓	✓	✓	✓
Use appropriate tools strategically.	✓	✓	✓	✓	✓	✓	✓	✓
Attend to precision.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and make use of structure.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and express regularity in repeated reasoning.	✓	✓	✓	✓	✓	✓	✓	✓
High School: Functions								
Interpreting Functions								
Understand the concept of a function and use function notation	✓	✓	✓	✓	✓	✓	✓	✓
Interpret functions that arise in applications in terms of the context	✓	✓	✓	✓	✓	✓	✓	✓
Analyze functions using different representations	✓	✓	✓	✓	✓	✓	✓	✓
Building Functions								
Build a function that models a relationship between two quantities	✓	✓	✓	✓	✓	✓	✓	✓
Build new functions from existing functions								
Linear, Quadratic, and Exponential Models								
Construct and compare linear and exponential models and solve problems	✓	✓	✓	✓	✓	✓	✓	✓
Interpret expressions for functions in terms of the situation they model	✓	✓	✓	✓	✓	✓	✓	✓
Trigonometric Functions								
Extend the domain of trigonometric functions using the unit circle								
Model periodic phenomena with trigonometric functions								
Prove and apply trigonometric identities								
Mathematical Practices								
Make sense of problems and persevere in solving them.	✓	✓	✓	✓	✓	✓	✓	✓
Reason abstractly and quantitatively.	✓	✓	✓	✓	✓	✓	✓	✓
Construct viable arguments and critique the reasoning of others.								
Model with mathematics.	✓	✓	✓	✓	✓	✓	✓	✓
Use appropriate tools strategically.	✓	✓	✓	✓	✓	✓	✓	✓
Attend to precision.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and make use of structure.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and express regularity in repeated reasoning.	✓	✓	✓	✓	✓	✓	✓	✓
High School: Modeling								

Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (*).	✓	✓	✓	✓	✓	✓	✓	✓
High School: Geometry								
Congruence								
Experiment with transformations in the plane								
Understand congruence in terms of rigid motions								
Prove geometric theorems								
Make geometric constructions								
Similarity, Right Triangles, and Trigonometry								
Understand similarity in terms of similarity transformations								
Prove theorems involving similarity								
Define trigonometric ratios and solve problems involving right triangles								
Apply trigonometry to general triangles								
Circles								
Understand and apply theorems about circles							✓	
Find arc lengths and areas of sectors of circles								
Expressing Geometric Properties with Equations								
Translate between the geometric description and the equation for a conic section								
Use coordinates to prove simple geometric theorems algebraically								
Geometric Measurement and Dimension								
Explain volume formulas and use them to solve problems								
Visualize relationships between two-dimensional and three-dimensional objects	✓	✓	✓	✓	✓	✓	✓	✓
Modeling with Geometry								
Apply geometric concepts in modeling situations	✓	✓	✓	✓	✓	✓	✓	✓
Mathematical Practices								
Make sense of problems and persevere in solving them.	✓	✓	✓	✓	✓	✓	✓	✓
Reason abstractly and quantitatively.	✓	✓	✓	✓	✓	✓	✓	✓
Construct viable arguments and critique the reasoning of others.								
Model with mathematics.	✓	✓	✓	✓	✓	✓	✓	✓
Use appropriate tools strategically.	✓	✓	✓	✓	✓	✓	✓	✓
Attend to precision.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and make use of structure.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and express regularity in repeated reasoning.	✓	✓	✓	✓	✓	✓	✓	✓
High School: Statistics & Probability								
Interpreting Categorical and Quantitative Data								
Summarize, represent, and interpret data on a single count or measurement variable			✓	✓		✓	✓	✓
Summarize, represent, and interpret data on two categorical and quantitative variables			✓	✓		✓	✓	✓
Interpret linear models	✓	✓	✓	✓	✓	✓	✓	✓
Making Inferences and Justifying Conclusions								
Understand and evaluate random processes underlying statistical experiments			✓	✓		✓	✓	✓
Make inferences and justify conclusions from sample surveys, experiments and observational studies			✓	✓		✓	✓	✓
Conditional Probability and the Rules of Probability								
Understand independence and conditional probability and use them to interpret data								
Use the rules of probability to compute probabilities of compound events in a uniform probability model	✓	✓	✓	✓	✓	✓	✓	✓
Using Probability to Make Decisions								
Calculate expected values and use them to solve problems	✓	✓	✓	✓	✓	✓	✓	✓
Use probability to evaluate outcomes of decisions	✓	✓	✓	✓	✓	✓	✓	✓
Mathematical Practices								
Make sense of problems and persevere in solving them.	✓	✓	✓	✓	✓	✓	✓	✓
Reason abstractly and quantitatively.	✓	✓	✓	✓	✓	✓	✓	✓
Construct viable arguments and critique the reasoning of others.								
Model with mathematics.	✓	✓	✓	✓	✓	✓	✓	✓
Use appropriate tools strategically.	✓	✓	✓	✓	✓	✓	✓	✓
Attend to precision.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and make use of structure.	✓	✓	✓	✓	✓	✓	✓	✓
Look for and express regularity in repeated reasoning.	✓	✓	✓	✓	✓	✓	✓	✓

Legend:

✓ = Correlates to Standard