Summary of Changes from Common Core Standards to Next Generation Learning Standards (2017)

This list summarizes the important changes proposed in 2017 from the Common Core State Standards to the Next Generation Learning Standards. Not all changes are included here. "Add" means the standard was moved from another course or is new. "Remove" means the standard is no longer taught in a Regents-level math course. For a complete list of changes, justifications, and other details, see the New York State Education Department's Aim High NY web site.

ALGEBRA I

- **+** (N-RN.B.3) ADD: Generate equivalent forms of rational and irrational numbers (i.e. operations with radicals?) w/o rationalizing denominators
- ➤ (A-SSE.3a) MOVE: Factor quadratic trinomials with leading coefficients > 1 (after GCF removed) moved to Algebra II
- **−** (A-SSE.3b) REMOVE: Completing the square in quadratic expression to reveal maximum or minimum value
- **−** (A-APR.A.1) REMOVE: Closure of operations with polynomials
- **•** (A-REI.A.1a) CLARIFY: Justify steps in solving linear or quadratic equations (equation types not specified before)
- **−** (A-REI.B.4) REMOVE: Derivation of quadratic formula
- **+** (A-REI.C.7a) ADD: Solve quadratic-linear system (parabolas only)
- ➤ (A-REI.D.11) MOVE: Solve $f(x) < g(x)$ or $f(x) \leq g(x)$ graphically (implied in Alg. I, moved to Algebra II)
- ➤ (F-IF.A.3) MOVE: Functional notation for sequences and recursive forms moved to Algebra II
- **−** (F-IF.C.7b) REMOVE: Graph and state key features of cube root function (square root and piecewise functions still required)
- ➤ (F-BF.A.1a) MOVE: Recursive sequences moved to Algebra II
- ➤ (F-BF.B.3) MOVE: $f(kx)$ transformation moved to Algebra II
- **−** (S-ID.B.6) REMOVE: Plot and analyze residuals

GEOMETRY

- **+** (G-CO.A.3) ADD: Describe rotations and reflections that carry irregular (not just regular) polygon onto itself
- **+** (G-CO.A.4) ADD: Define center point of rotation
- **•** (G-CO.A.4) ADD: Explain AAS and Hyp-Leg from rigid motions (SAS, SSS, ASA already required)
- **•** (G-CO.C.9) SPECIFY: Examples of angle theorems: vertical angles, parallel lines & transversal, perpendicular bisector
- **•** (G-CO.C.10) SPECIFY: Examples of triangle theorems: interior angle sum, exterior angle sum, Exterior Angle Theorem, isosceles triangles, midsegment of triangle
- **•** (G-CO.C.11) SPECIFY: Examples of parallelogram theorems: properties of parallelograms and special parallelograms
- **•** (G-CO.D.12) SPECIFY: Examples of constructions: copy segments and angles, bisect segments and angles, perpendicular lines, parallel lines, isosceles triangle, points of concurrency in triangle, transformations
- **+** (G-SRT.D.9) ADD: Apply area of triangle $A = (1/2)\, ab \sin C$ formula
- **•** (G-C.A.2b) SPECIFY: Circle relationships include angles and segments (tangents and secants not specified earlier)
- **−** (G-C.A.3) REMOVE: Construct inscribed and circumscribed circles of a triangle, prove properties of angles of cyclic quadrilateral
- ➤ (G-C.B.5) MOVE: Find central angle, arc length, radius, area of sector moved to Alg. II
- **−** (G-GMD.A.1) REMOVE: Use Cavalieri's Principle to explain volume formulas (justification of formulas required but no method specified)
- **+** (G-GMD.B.4) ADD: Plane sections do not have to be parallel or perpendicular to base

ALGEBRA II

- **+** (A-SSE.3a) ADD: Factor quadratic trinomials with leading coefficients > 1 (after GCF removed) (was in Alg. I)
- **−** (A-APR.C.4) REMOVE: Prove polynomial identities
- **•** (A-APR.D.6) CLARIFY: Long division of polynomials and using a computer algebra system to divide polynomials (dividing polynomials is still required but using a specific method like long division is no longer required)
- **•** (A-REI.A.1a) CLARIFY: Justify steps in solving radical or rational equations (equation types not specified before)
- **−** (A-REI.C.6) REMOVE: Solve systems of three equations in three variables
- **•** (A-REI.C.7) SPECIFY: Solve quadratic-linear systems with circles
- **+** (A-REI.D.11) ADD: Solve $f(x) < g(x)$ or $f(x) \leq g(x)$ graphically (implied in Alg. I but not explicitly stated)
- **+** (F-IF.A.3) ADD: Functional notation for sequences and recursive forms (was in Alg. I)
- **•** (F-IF.C.7e) ADD: Graph and describe end behavior and intercepts of cube root function
- **•** (F-IF.C.8b) SPECIFY: Exponential growth includes compound and continuous interest
- **+** (F-BF.A.1a) ADD: Includes recursive functions (was in Alg. I)
- **+** (F-BF.B.3) ADD: $f(kx)$ transformation (was in Alg. I)
- **+** (F-BF.B.5a) ADD: Understand inverse relationship between exponents and logarithms
- **+** (F-BF.B.6) ADD: Convert between, evaluate, write expanded form and summation notation
- **+** (F-LE.A.4) ADD: Solve $ab^t = d$ for t, where base b is any real number (base was limited to 2, 10, e)
- **+** (F-TF.A.1b) ADD: Using proportionality, find one given the others: central angle, arc length, radius, area of sector (was G-C.B.5 in Geometry)
- **+** (F-TF.A.4) ADD: Use unit circle to explain symmetry (odd/even) and periodicity of trigonometric functions
- **+** (F-TF.C.8) ADD: Find value of 6 trigonometric functions given value of one trigonometric function value
- **−** (G-GPE.A.2) REMOVE: Derive equation of parabola given focus and directrix
- **•** PROBABILITY AND STATISTICS STANDARDS CLARIFIED:
  - o (S-ID.A.4a, S-ID.A.4b) Use the normal distribution to estimate population percentages, estimate areas under normal curve
  - o (S-ID.B.6) Represent bivariate data on scatterplots
  - o (S-ID.B6a) Fit linear, quadratic, exponential functions to data
  - o (S-IC.A.2) Determine if a statistic is likely to occur based on a given simulation
  - o (S-IC.B.3) Understand uses of, relationship of randomization to, and differences between surveys, experiments, observational studies.
  - o (S-IC.B.4) Given simulation model based on sample, construct 95% interval centered on sample (± 2 std. dev.); determine if suggested parameter is plausible
  - o (S-IC.B.6a, S-IC.B.6b) Use statistical language to draw conclusions from numerical summaries and critique claims
  - o (S-CP.A.1) Describe events as subsets of sample space or unions, complements, intersections of other events
  - o (S-CP.A.4) Construct and interpret two-way tables, use them to determine if events are independent and calculate conditional probability
  - o (S-CP.B.7) Use Addition Rule of probability and interpret the answer