

High School Mathematics at a Glance

| | MATH 1 | MATH 2 | MATH 3 | MATH 4 |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| NUMBER & OPERATIONS | | <ul style="list-style-type: none"> • Complex numbers | | |
| GEOMETRY | <ul style="list-style-type: none"> • Distance between 2 points • Distance between a point and a line • Midpoint • Inductive, deductive reasoning • Converse, inverse, contrapositive • Sum of interior, exterior angles • Triangle inequalities • SSS, SAS, ASA, AAS, HL • Use and prove properties of special quadrilaterals • Incenter, orthocenter, circumcenter, centroid | <ul style="list-style-type: none"> • Special right triangles • Right triangle trigonometry • Circles and properties • Length of arc • Area of a sector • Surface area and volume of sphere • Relationships of similar solids | <ul style="list-style-type: none"> • Investigate relationships between lines and circles • Circle • Ellipse • Hyperbola • Parabola • Equations of Planes and spheres | |

High School Mathematics at a Glance

| | MATH 1 | MATH 2 | MATH 3 | MATH 4 |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ALGEBRA | <ul style="list-style-type: none"> Function notation $F(x) = x^n$ ($n=1,2,3$), \sqrt{x}, x, and $1/x$ Characteristics of these functions Sequences as functions Compare rates of change among functions Even, odd, neither Simplify expressions involving and perform operations with square roots Operations on polynomials Binomial theorem Factoring of 2nd degree polynomials & cubes Solve quadratic equations with $a=1$ Solve equations using radicals Solve simple rational equations ($a=1$ only) | <ul style="list-style-type: none"> Step & piecewise functions Characteristics of their graphs Solve absolute value equations and inequalities Exponential functions Solve exponential equations and inequalities Geometric sequences as exponential function Quadratic function ($y = ax^2 + bx + c$) and its graph Quadratic inequalities Inverses | <ul style="list-style-type: none"> Polynomials of degree > 2 Classify polynomial functions as even, odd, or neither Characteristics of poly. functions Logarithmic functions Solve exponential, logarithmic and polynomial equations and inequalities Perform operations with, find inverses of, and examine properties of matrices Use matrices of represent and solve problems Linear programming Vertex-edge graphs | <ul style="list-style-type: none"> Rational functions Solve rational equations and inequalities Unit circle trigonometric functions Graph of 6 trigonometric functions Build functions using sum, difference, product, quotient, and composition of functions Trigonometric identities Solve trigonometric equations and inequalities by graphing and algebraic manipulation Law of Sines Law of Cosines Area of triangle (trig) formula Inverse trigonometric functions (sine, cosines, and tangent only) Sequences and series Summation notation Understand and use vectors |
| DATA ANALYSIS AND PROBABILITY | <ul style="list-style-type: none"> Principles of counting Simple permutations & combinations Mutually exclusive, dependent, and conditional events Expected values Compare summary statistics Understand random sample Mean absolute deviation | <ul style="list-style-type: none"> Population means & deviations Model data using linear and quadratic regressions | <ul style="list-style-type: none"> Histograms of discrete random variables Normal distribution Experimental and observational studies | <ul style="list-style-type: none"> Central limit theorem Confidence interval Margin of error |
| PROCESS STANDARDS | Problem Solving, Arguments, Math Vocabulary, Interconnectivity, Communication | Problem Solving, Arguments, Math Vocabulary, Interconnectivity, Communication | Problem Solving, Arguments, Math Vocabulary, Interconnectivity, Communication | Problem Solving, Arguments, Math Vocabulary, Interconnectivity, Communication |