

**Helena Public Schools
High School Mathematics
Math II - Teacher Resource**

Over-riding practices:

- Graphical, Analytical and Numerical relationships
- Word Problems / Problem Solving
- Comfort with “unfriendly” answers

Focal Points	
Right Triangle Trigonometry	<ul style="list-style-type: none"> • Ratios and proportion of similar triangles • Utilize similar triangles to develop trigonometric ratios. • Use Pythagorean theorem and sin, cos, tan ratios to find measures of angles and sides with applications
Logic and Proof	<ul style="list-style-type: none"> • Conditional statements and rules of logic • Deductive reasoning utilizing flow, paragraph, and 2-column proof formats • Similarity and Congruence of geometric figures, including ratios and proportions
Geometry	<ul style="list-style-type: none"> • Coordinate geometry and proof • Parallel and perpendicular lines with proof • Angle relationships (ex: vertical angles, linear pair, complementary, supplementary, angles of polygons, angles formed by a transversal)
Quadratics $y = ax^2 + bx + c$	<ul style="list-style-type: none"> • Factoring with $a \neq 1$ • Graphing • Completing the square • Quadratic formula
Linear Systems	<ul style="list-style-type: none"> • Matrices • Elimination (add/subtract) • Investigating # of solutions to a system • Slopes of Parallel and perpendicular lines
Probability	<ul style="list-style-type: none"> • Permutations and combinations • $P(A \text{ and } B)$ • $P(A \text{ or } B)$
Cubics $y = ax^3 + bx^2 + cx + d$	<ul style="list-style-type: none"> • Graphing • Solving cubics by graphing and factoring the greatest common factor • Identify number of zeroes (double, triple zeroes)

Maintenance Topics

Linear Systems	<ul style="list-style-type: none"> • Substitutions • Graphing
Linear Relationships (graphing)	<ul style="list-style-type: none"> •
Solving Equations Graphically	<ul style="list-style-type: none"> • Algebraically and Numerically
Factoring of quadratics with common factors and $a = 1$	<ul style="list-style-type: none"> •

Preview Topics

- Functions
- Complex Numbers