PARK CITY HIGH SCHOOL

Standards-Based Education
Priority Standards

Honors Secondary Math II

PS 1 Students will understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trig ratios (G.SRT.6)

PS 2 Students will explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. (N.RN.1) Students will rewrite expressions involving radicals and rational exponents using the properties of exponents. (N.RN.2)

PS 3 Students will understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. (A.APR.1) Use the structure of an expression to identify ways to rewrite it. (A.SSE.2). Students will choose and produce equivalent forms of an expression to reveal and explain properties of the quantity represented by the expression (A.SSE.3).

PS 4 Students will graph functions expressed symbolically and show key features of the graph and to show intercepts, maxima, and minima (F.IF.7 & F.IF.7a). Students will identify the effect on the graph of replacing f(x) with f(x) + k, k•f(x), and f(x + k) for specific values of k focusing on quadratic and absolute value functions (F.BF.3). Students will interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description (F.IF.4). Students will write a function defined by an expression in different but equivalent forms and be able to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context (F.IF.8.a)

PS 5 Students will factor quadratic expressions to reveal zeros of the functions it defines (A.SSE.3a). Students will solve quadratic equations by inspection, taking square roots, completing the square, the quadratic formula, and factoring (A.REI.4b).

PS 6 Students will recognize that there is a complex number i such that i 2 = -1, and every complex number has the form a + bi with a and b real (N.CN.1). Students will solve quadratic equations with real coefficients that have complex solutions (N.CN.7). Students will find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers. (N.CN.3). Students will represent addition, subtraction, and multiplication geometrically

on the complex plane; use properties of this representation for computation. (N.CN.5)

PS 7 Students will solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. (Standard A.REI.7)

PS 8 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph piecewise-defined functions and absolute value functions. Compare and contrast absolute value and piecewise-defined functions with linear, quadratic, and exponential functions. Highlight issues of domain, range, and usefulness when examining piecewise-defined functions. (F.IF.7& 7b)

PS 9 Students will identify and describe relationships among inscribed angles, radii, and chords including relationships between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle (G.C.2). Students will derive the equation of a circle given center and radius using the Pythagorean Theorem (G.GPE.1)

PS 10 Students will recognize and explain the concepts of conditional probability and independence in everyday language and every day situations (S.CP.5). Students will find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model (S.CP.6). Students will understand the conditional probability of A given B as P(A and B)/P(B), and interpret independence of A and B as saying that the conditional probability of B given A is the same as the probability of B. (S.CP.3) Students will apply the Addition Rule, P(A or B) = P(A) + P(B) – P(A and B), and interpret the answer in terms of the model. (Standard S.CP.7) Students will apply the general Multiplication Rule in a uniform probability model, P(A and B) = P(A)P(B|A) = P(B)P(A|B), and interpret the answer in terms of the model. (S.CP.8)

PS 11 Students will use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. Informal arguments for volume formulas can make use of the way in which volume scale under similarity transformations: when one figure results from another by applying a similarity transformation, volumes of solid figures scale by k3 under a similarity transformation with scale factor k. (G.GMD.3)