Priority Standards

Math Priority Standards – Pre-Calculus

Below is a table of the priority standards.

Priority Standards	Description
A.CED.3	**(all)** Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.* ★ -*KSDE Flipbooks**
A.APR.5	**(+)** Know and apply the **Binomial Theorem** for the expansion of $(x + y)^n$ in powers of *x* and *y* for a positive integer *n*, where *x* and *y* are any numbers, with coefficients determined for example by Pascal's Triangle. The Binomial Theorem can be proven by mathematical **induction** or by a **combinatorial argument.**
A.REI.7	**(+)** Represent a system of linear equations as a single matrix equation and solve (incorporating technology) for matrices of dimension 3×3 or greater.
F.IF.4	**(all)** For a function that models a relationship between two quantities, interpret key features of expressions, graphs and tables in terms of the quantities, and sketch graphs showing key features given a description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. ★ -*KSDE Flipbooks**
F.IF.7acdef	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. ★ • F.IF.7a. **(9/10)** Graph linear, quadratic and absolute value functions and show intercepts, maxima, minima and end behavior. ★ • F.IF.7c. **(11)** Graph logarithmic functions, emphasizing the inverse relationship with exponentials and showing intercepts and end behavior. ★ -*KSDE Flipbooks** • F.IF.7d. **(+)** Graph piecewise-defined functions, including step functions. ★ • F.IF.7e. **(11)** Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. ★ • F.IF.7f. **(+)** Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior. ★
F.BF.1b	Use functions to model real-world relationships.

Priority Standards	Description
	• F.BF.1b. **(11)** Determine an **explicit expression** , a **recursive function**, or steps for calculation from a context. -*KSDE Flipbooks**
F.BF.2	**(+)** Write arithmetic and geometric **sequences** and series both recursively and with an explicit formula, use them to model situations, and translate between the two forms. ★
F.BF.3	**(9/10/11)** Transform parent functions $\big(f(x)\big)$ by replacing $f(x)$ with $f(x)+k$, $kf(x)$, $f(kx)$, and $f(x+k)$ for specific values of *k* (both positive and negative); find the value of *k* given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. For **(9/10)** focus on linear, quadratic, and absolute value functions. -*KSDE Flipbooks**
F.TF.5	**(+)** Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline. ★
F.TF.7	**(+)** Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context. ★
N.CN.5	**(+)** Represent complex numbers on the complex plane in rectangular and **polar form** (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.
N.CN.10	**(+)** Know the **Fundamental Theorem of Algebra**; show that it is true for quadratic polynomials.
N.VM.3	**(+)** Solve problems involving velocity and other quantities that can be represented by vectors.
G.GPE.5	**(+)** Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant; graph the ellipse or hyperbola in the coordinate plane.

**Kansas Department of Education has created 'Flipbooks' for current standards that detail each standard, including examples and resources to support in understanding the depth of the standard.*