The Standards for Mathematical Practice describe the skills that mathematics educators should seek to develop in their students. The descriptions of the mathematical practices in this document provide examples of how student performance will change and grow as they engage with and master new and more advanced mathematical ideas across the grade levels.

MP.1 Make sense of problems and persevere in solving them.
Students persevere when attempting to understand the differences between quadratic functions and the linear and exponential functions they studied previously. They create diagrams of geometric problems to help make sense of the problems.

MP.2 Reason abstractly and quantitatively.
Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

MP.3 Construct viable arguments and critique the reasoning of others.
Students construct proofs of geometric theorems based relationships between sine and cosine of complementary angles.

MP.4 Model with mathematics.
Students apply their mathematical understanding of quadratic functions to real-world problems. They also discover mathematics through experimentation and by examining patterns in data from real-world contexts.

MP.5 Use appropriate tools strategically.
Students develop a general understanding of the graph of an equation or function as a representation of that object, and they use tools such as graphing calculators or graphing software to create graphs in more complex examples, understanding how to interpret the result.

MP.6 Attend to precision.
To avoid the extraneous solutions, students make a use of the definition of the solution of the equation by asking, "Does this value make the equation a correct statement?"

MP.7 Look for and make use of structure.
Students develop formulas such as $(a \pm b)^2 = a^2 \pm 2ab + b^2$ by applying the distributive property. Students see that the expression $5 + (n - 2)^2$ takes the form of 5 plus "something squared," and because "something squared" must be positive or zero, the expression can be no smaller than 5.

MP.8 Look for and express regularity in repeated reasoning.
Students understand that when figures are scaled by a factor of k, the effect on their lengths, areas and volumes remain the same such that they are multiples of k, k^2, and k^3.