

Grade 10 Proficiency Level Descriptors - Mathematics

Advanced Level

The student demonstrates highly developed understanding and application of operations on and properties of real numbers, in particular exponential and radical expressions; complex number theory on sophisticated variable expressions; converting more involved square and cubic units; multifaceted functions, patterns, equations and inequalities using multiple representations; algebraic and geometric thinking involving intricate formulas, and difficult systems of equations and inequalities; challenging geometric relationships; volume and surface area of non-routine compound solids; and advanced data analysis, probabilities, and counting techniques.

Proficient Level

The student demonstrates conceptual understanding of operations on, subsets of, and properties of real numbers, including exponential and radical expressions; applications of number theory and computations on numerical and variable expressions; converting straightforward square and cubic units; generalizing functions, patterns, equations and inequalities; algebraic and geometric thinking involving formulas, and systems of equations or inequalities, including transformations; geometric relationships and properties of plane figures; volume or surface area; displaying, analyzing, and justifying conclusions related to data sets; and probability and its uses.

Below Proficient Level

The student demonstrates minimal understanding of operations; properties of real numbers; basic computations on numerical and variable expressions; describing uncomplicated functions and equations from a table or graph; extending straightforward patterns; algebraic or geometric thinking involving formulas and simple systems of equations; geometric properties of plane figures; basic geometric relationships; rudimentary problems involving volume or surface area; organizing or displaying data sets; counting techniques; and probability.

Far Below Proficient Level

There is a significant need for additional instructional opportunities to achieve the proficient level.