

Grade 10 Mathematics ISAT Proficiency Level Descriptors

Advanced

In the area of mathematics, tenth grade students typically performing at the Advanced level consistently demonstrate a **thorough understanding** of grade-level skills. These students

- demonstrate thorough understanding of algebraic properties and the numeration system.
- perform challenging calculations.
- demonstrate firm understanding of measurement related to two- and three-dimensional figures.
- apply multiple conversions between units of measure in problem-solving situations.
- use rates, proportions, ratios, scale factors, and map scales in challenging problem-solving situations.
- represent, solve, and model challenging problems involving multi-step equations and inequalities, systems of equations, graphs, and sequences.
- apply advanced geometric concepts.
- apply the Pythagorean theorem in a challenging real-world situation.
- represent and interpret linear relationships in complex problems.
- use logic to make and evaluate more involved mathematical arguments.
- read, interpret, and make predictions given information from complex tables, charts, and graphs.
- organize information into data displays in challenging situations.
- demonstrate understanding of theoretical and experimental probability in complex situations.
- interpret and make predictions based on statistical measures presented in challenging situations.

Proficient

In the area of mathematics, tenth grade students typically performing at the Proficient level demonstrate a **general understanding** of grade-level skills. These students

- demonstrate an understanding of algebraic properties and the numeration system.
- perform grade-level calculations.
- understand measurements related to two- and three- dimensional figures.
- apply dimensional analysis.
- use rates, proportions, ratios, scale factors, and map scales in problem solving situations.
- represent and simplify numerical and algebraic equations and inequalities.
- solve and model problems involving multi-step equations and inequalities, systems of equations, graphs, and sequences.
- differentiate between linear and non-linear equations and graphs.
- understand attributes of the Cartesian Coordinate system.
- represent and interpret linear relationships.
- recognize and apply geometric concepts.
- use the Pythagorean theorem to find missing sides of a right triangle.
- use logic to make and evaluate mathematical arguments.
- read, interpret, and make predictions given information from tables, charts, and graphs.
- organize information into data displays.
- demonstrate understanding of theoretical and experimental probability.
- interpret and make predictions based on statistical measures.

Basic

In the area of mathematics, tenth grade students typically performing at the Basic level demonstrate a **limited understanding** of grade-level skills. These students

- demonstrate limited understanding of algebraic properties and the numeration system.
- perform simple calculations.
- demonstrate limited understanding of measurement related to two- and three-dimensional figures.
- convert simple units of measurement.
- show limited understanding of rates, proportions, ratios, scale factors, map scales, and dimensional analysis.
- represent and simplify basic numerical and algebraic equations and inequalities.
- solve simple problems involving multi-step equations and inequalities, graphs, and sequences.
- demonstrate limited understanding of the difference between linear and non-linear graphs.
- recognize and apply simple geometric concepts.
- demonstrate limited understanding of the Pythagorean theorem.
- show limited understanding of the Cartesian Coordinate system and linear relationships.
- read and interpret information from basic tables, charts, and graphs.
- organize information into simple data displays.
- demonstrate limited understanding of theoretical and experimental probability in common situations.