



# Illinois State Board of Education

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**James T. Meeks**  
Chairman

**Tony Smith, Ph.D.**  
State Superintendent of Education

Dear Families,

The reports that you are receiving reflect your child's individual performance on the Partnership for Assessment of Readiness for College and Careers (PARCC) test. The PARCC assessment serves as an "educational GPS system" that is designed to measure students' current performance in relation to the Illinois Learning Standards, to which the assessment is aligned. It points the way to what students need to learn in order to be ready for the next grade level and, by the end of high school, for future success in college and careers.

The Illinois Learning Standards set high expectations that are focused on critical thinking and real world application. We expect that the more detailed information provided by the PARCC score reports and supporting materials will lead to strong engagement between parents, teachers, and students in support of student learning. We encourage you to talk to your child's teacher about these results and about what you are doing at home to support your child's success.

We must celebrate the good work our teachers and schools are doing to teach the new content critical for the future success of our students. We fully expect students will continue to make progress along the continuum of mastery as they gain additional knowledge related to the standards and become more familiar with the technology.

It is understood that no test can ever fully capture the skills and abilities of a great teacher or the extraordinary benefits and positive impact of a great school. Tests are one measure to help track our progress. Along with other indicators, tests help give us a sense of where and how we are succeeding and where and how we must improve. The PARCC assessment is designed to give schools and teachers more information to support improvement and differentiation in instruction.

Sincerely,

A handwritten signature in black ink, appearing to read "Tony Smith".

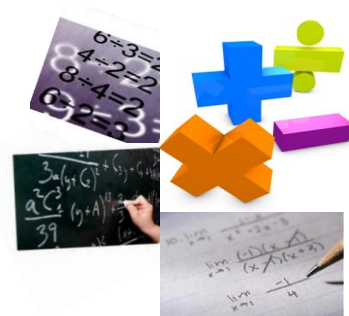
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## VISIT THE FOLLOWING WEBSITES FOR MORE INFORMATION:

**ISBE PARCC PLACE** at <https://www.isbe.net/Pages/PARCC-Place.aspx>  
**PARCC Online** at <http://parcc-assessment.org/resources/parent-resources>  
**UNDERSTAND THE SCORE** at [www.understandthescore.org/](http://www.understandthescore.org/)  
**CLASSROOMS IN ACTION** at [www.ilclassroomsinaction.org](http://www.ilclassroomsinaction.org)

## Performance Level Summary for Algebra II

Performance level descriptors (PLDs) indicate what a typical student at each level should be able to demonstrate based on his/her command of grade-level standards. In mathematics, the performance levels at each grade level are written for each of four assessment sub-claims, which are represented on the individual student score report.



### Level 2

#### Sub-claims A and B – Major, additional, and supporting content

- Performs simple operations with complex numbers.
- Solves problems involving linear, exponential and quadratic equations.
- Given a graph, identifies key features of polynomial and exponential functions and equivalent expressions.
- Identifies the effects of the transformation  $f(x)+k$ .
- Identifies functions that model arithmetic and geometric sequences.
- Identifies trigonometric values for an angle given a trigonometric value in quadrant 1.
- Identifies characteristics of a sample survey, an experiment and an observational study. Identifies mean and standard deviation of a given normal distribution. Determines independence.

#### Sub-claim C – Reasoning

- Communicates a response, which may be incomplete, illogical, based on faulty assumptions, or include major calculation errors in written justifications.

#### Sub-claim D – Modeling

- Applies mathematics using given assumptions, tools and functions, analyzing relationships, and writing an incomplete algebraic expression or equation.

### Level 3

#### Sub-claims A and B – Major, additional, and supporting content

- Performs operations with complex numbers.
- Solves problems involving linear, exponential and quadratic equations and systems of equations, using inverses.
- Identifies key features of polynomial and exponential functions, sketches graphs and creates equivalent expressions. Identifies the effects of the transformation  $f(x)+k$  and  $kf(x)$ . Determines if a function is even or odd.
- Builds functions that model arithmetic and geometric sequences.
- Identifies trigonometric values for an angle given a trigonometric value and quadrant for that angle.
- Identifies a sample survey, an experiment and an observational study. Fits data to normal distributions. Uses fitted functions to solve problems. Determines conditional probability and independence.

#### Sub-claim C – Reasoning

- Communicates a logical response, which may be incomplete and include minor calculation errors in written justifications. Evaluates the validity of other's approaches and conclusions.

#### Sub-claim D – Modeling

- Applies mathematics illustrating and analyzing relationships between important quantities, writing an incomplete algebraic expression, equation, or function, modifying the model, and interpreting mathematical results in a simplified context.

### Level 4

#### Sub-claims A and B – Major, additional, and supporting content

- Solves problems involving trigonometric equations.

- Interprets key features of rational function. Identifies the effects of the transformation  $f(kx)$  and  $f(x+k)$ .
- Builds functions that model trigonometric functions or combinations of functions to solve problems.
- Identifies trigonometric relationships in the unit circle.
- Determines appropriateness of a sample survey, an experiment and an observational study. Uses sample data to make inferences. Fits exponential functions to data. Uses two-way frequency tables.

**Sub-claim C – Reasoning**

- Communicates a precise, logical response in written justifications. Makes mathematical connections and evaluates, interprets and critiques the validity of other’s responses and reasoning.

**Sub-claim D – Modeling**

- Applies mathematics by making assumptions, mapping and analyzing relationships between important quantities, selecting appropriate tools to create models, writing a clear and correct algebraic expression, equation, or function, improving the model, and interpreting results in context.

## Level 5

**Sub-claims A and B – Major, additional, and supporting content**

- Compares key features of trigonometric and logarithmic functions. Applies the remainder theorem. Identifies the effects of multiple transformations and changing parameters on functions.
- Describes the relationship between radian measure and subtended arcs.
- Uses sample data to justify and critique inferences and conclusions. Fits trigonometric functions to data. Decides when models fitted to data are inappropriate. Makes changes to statistical study designs. Uses the Addition Rule of probability.

**Sub-claim C – Reasoning**

- Evaluates, interprets and critiques the validity of other’s responses, correcting, as necessary. Generalizes a conclusion or provides a counter example.

**Sub-claim D – Modeling**

- In real-world problems, analyzes and justifies constraints, relationships and models.

For more information and a full version of the PLDs, visit <http://parcc-assessment.org/assessments/test-design/mathematics/math-performance-level-descriptors>.