

Missouri End-of-Course Assessment Achievement Level Descriptors

Algebra II

Achievement Levels

Advanced: Students performing at the Advanced level on the Missouri Algebra II End-of-Course Assessment demonstrate a thorough understanding of important college and career ready mathematical content and concepts. They demonstrate these skills in number and quantity, algebra, functions, and statistics and probability. In addition to demonstrating, understanding, and applying the skills at the Proficient level, students scoring at the Advanced level carry out strategies to solve non-routine problems with high precision and fluency.

Scale Score Cut: 225-250

Proficient: Students performing at the Proficient level on the Missouri Algebra II End-of-Course Assessment demonstrate sufficient understanding of important college and career ready mathematical content and concepts. They demonstrate these skills in number and quantity, algebra, functions, and statistics and probability. In addition to demonstrating, understanding, and applying the skills at the Basic level, students scoring at the Proficient level carry out strategies to solve problems with sufficient precision and fluency.

Scale Score Cut: 200-224

Basic: Students performing at the Basic level on the Missouri Algebra II End-of-Course Assessment demonstrate partial understanding of important college and career ready mathematical content and concepts. They demonstrate these skills in number and quantity, algebra, functions, and statistics and probability. In addition to demonstrating, understanding, and applying the skills at the Below Basic level, students scoring at the Basic level carry out strategies to solve routine problems with partial precision and fluency.

Scale Score Cut: 186-199

Below Basic: Students performing at the Below Basic level on the Missouri Algebra II End-of-Course Assessment demonstrate limited understanding of important college and career ready mathematical content and concepts. They demonstrate these skills in number and quantity, algebra, functions, and statistics and probability. In addition, students scoring at the Below Basic level carry out strategies to solve simple problems with limited precision and fluency.

Scale Score Cut: 100-185

Achievement Descriptors

Advanced

Scale Score Cut: 225-250

In addition to understanding and applying the skills at the Proficient level, students at this level:

- ✓ Use mathematical properties to create and interpret equivalent expressions that can be used to solve non-routine problems
- ✓ Apply the remainder theorem
- ✓ Construct logarithmic and trigonometric function models to solve real world problems
- ✓ Analyze the average rate of change for different intervals of a graph
- ✓ Build functions, including the composition of more than two functions, to model more complex word problems and use the models to solve and interpret problems
- ✓ Describe the effect of changing the parameters of a function on the key features of the graph of the function
- ✓ Determine how the changes in parameters of a function impact its representation
- ✓ Identify the effects of one or more transformations given in context on the graphs of functions
- ✓ Evaluate reports based on data
- ✓ Calculate expected values and use them to evaluate decisions and solve problems

Proficient

Scale Score Cut: 200-224

In addition to understanding and applying the skills at the Basic level, students at this level:

- ✓ Use mathematical properties to create equivalent expressions and use them to sketch graphs and identify characteristics
- ✓ Rewrite rational expressions using long division
- ✓ Construct linear, exponential, and quadratic function models with real or complex solutions to solve word problems
- ✓ Calculate and interpret the average rate of change over a specified interval
- ✓ Build functions, including composition of functions, to model word problems and use the models to solve and interpret problems
- ✓ Write and graph exponential and polynomial functions in equivalent forms and identify and compare key features
- ✓ Identify the effects of multiple transformations on the graphs of functions and determine if the resulting function is even or odd
- ✓ Make inferences and justify conclusions from sample surveys and experiments.

Basic

Scale Score Cut: 186-199

In addition to understanding and applying the skills at the Below Basic level, students at this level:

- ✓ Use mathematical properties to create equivalent expressions for rational expressions
- ✓ Use the distributive property to perform operations with complex numbers
- ✓ Rewrite rational expressions using factoring
- ✓ Construct linear, exponential, and quadratic function models to solve routine word problems
- ✓ Calculate the average rate of change of polynomial and exponential functions over a specified interval
- ✓ Build functions to model word problems and use the models to solve problems
- ✓ Write and graph exponential functions in equivalent forms and identify key features
- ✓ Identify the effects of a single transformation $f(kx)$ or $f(x+k)$, on the graphs of various functions
- ✓ Review survey methods for possible bias

Below Basic

Scale Score Cut: 100-185

Students at this level:

- ✓ Use mathematical properties to create equivalent expressions for polynomial and exponential expressions
- ✓ Use commutative and associative properties to perform operations with complex numbers
- ✓ Construct linear and exponential function models to solve routine word problems
- ✓ Solve routine quadratic equations and systems of equations with real solutions
- ✓ Estimate the rate of change of polynomials from a graph
- ✓ Graph linear functions in equivalent forms and identify key features
- ✓ Identify the effects of a single transformation, $f(x) + k$ or $kf(x)$, on simple functions
- ✓ Create surveys to answer a statistical questions