

Unit 7 Standards Review

Algebra I

Unit Description:

Students will build fluency and continue to apply essential standards toward applications of concepts such as factoring, simplifying radicals, solving equations, and writing the equation of a line.

Standards for Mathematical Practice

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason abstractly and quantitatively.
- MP.3 Construct viable arguments and critique the reasoning of others.
- MP.4 Model with mathematics.
- MP.5 Use appropriate tools strategically.
- MP.6 Attend to precision.
- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning.

Louisiana Student Standards for Mathematics (LSSM)

A – Algebra	
SSE – Seeing Structure in Expressions	
B. Write expressions in equivalent forms to solve problems.	
A-SSE.B.3.a	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. ★ a. Factor a quadratic expression to reveal the zeros of the function it defines.
N – Number and Quantity	
RN – The Real Number System	
B. Use properties of rational and irrational numbers.	
N-RN.B.3	Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.
REI – Reasoning with Equations and Inequalities	
A. Understand solving equations as a process of reasoning and explain the reasoning.	
A-REI.A.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has

	a solution. Construct a viable argument to justify a solution method.
C. Solve Systems of Equations	
A-REI.C.6	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
LE – Linear, Quadratic, and Exponential Models	
A. Construct and compare linear, quadratic, and exponential models and solve problems.	
F-LE.A.2	Construct linear functions, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). ★

***As defined by LSSM, the basic modeling cycle involves:**

1. identifying variables in the situation and selecting those that represent essential features,
2. formulating a model by creating and selecting geometric, graphical, tabular, algebraic, or statistical representations that describe relationships between the variables,
3. analyzing and performing operations on these relationships to draw conclusions,
4. interpreting the results of the mathematics in terms of the original situation,
5. validating the conclusions by comparing them with the situation, and then either improving the model or, if it is acceptable,
6. reporting on the conclusions and the reasoning behind them.

Choices, assumptions, and approximations are present throughout this cycle.

Enduring Understandings:

- *Factoring polynomial expressions can reveal information about quantities and find critical points of the function.
- *Properties of exponents can be extended to radical expressions rewritten in exponential form.
- *Integration of various mathematical procedures builds a stronger foundation of finding solutions.
- *Two linear functions pertaining to the same data can be used to model situations where the result is the intersection of the two functions.

Essential Questions:

- *What connections can be made between various functions and various representations of functions?
- *What makes alternative algebraic algorithms both effective and efficient?
- *What are the possible solutions to a linear system of equations? Explain.