

## Algebra 1 - Expectations for Exit Exam

### Text Book Information:

Big Ideas Math – Algebra 1      Authors: Ron Larson & Laurie Boswell    ISBN-13: 978-1-60840-838-2  
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This Exit Exam will take approximately 4 hours. Students will be allowed to use a scientific calculator on all parts of the test. The calculator cannot have Wi-Fi capabilities (no phones or tablet apps). Calculators with graphing capabilities are prohibited during the graphing section of the test. The exam contains both multiple choice and constructed response items. Partial credit may be earned on some items. You must score 77% or more to pass the exam and be placed into Geometry for the following school year. Test scores are reported as pass/fail. The test is secure and will not be returned to the student or parent for review.

### **Content Covered in the Course:**

The Troy School District curriculum is based on the Michigan Mathematics Standards. The table below gives a brief description of the topics covered in the Algebra 1 textbook and their correlation to the tested standards. For a detailed explanation of the content expectations, see the complete list of Michigan Mathematics Standards for High School:

[http://www.michigan.gov/documents/mde/K-12\\_MI\\_Math\\_Standards\\_REV\\_470033\\_7\\_550413\\_7.pdf](http://www.michigan.gov/documents/mde/K-12_MI_Math_Standards_REV_470033_7_550413_7.pdf)

The Exit Exam is a comprehensive assessment of the full Troy School District Curriculum and Michigan Mathematics Standards. Students should be prepared to demonstrate their proficiency on all content.

<b>Content Overview</b>		<b>Michigan Standard(s) Correlation</b>
<b>Chapter 1: Solving Linear Equations</b>		
1.1	Solving Simple Equations	HSA-CED.A.1, HSA-REI.A.1, HSA-REI.B.3
1.2	Solving Multi-Step Equations	HSN-Q.A.1, HSA-CED.A.1, HSA-REI.B.3
1.3	Solving Equations with Variables on Both Sides	HSA-CED.A.1, HSA-REI.B.3
1.4	Solving Absolute Value Equations	HSA-CED.A.1, HSA-REI.B.3
1.5	Rewriting Equations and Formulas	HSA-CED.A.4
<b>Chapter 2: Solving Linear Inequalities</b>		
2.1	Writing and Graphing Inequalities	HSA-CED.A.1
2.2	Solving Inequalities Using Addition or Subtraction	HSA-CED.A.1, HSA-REI.B.3
2.3	Solving Inequalities Using Multiplication or Division	HSA-CED.A.1, HSA-REI.B.3
2.4	Solving Multi-Step Inequalities	HSA-CED.A.1, HSA-REI.B.3
2.5	Solving Compound Inequalities	HSA-CED.A.1, HSA-REI.B.3
2.6	Solving Absolute Value Inequalities	HSA-CED.A.1, HSA-REI.B.3

## Content Overview

## Michigan Standard(s) Correlation

### Chapter 3: Graphing Linear Functions

3.1	Functions	HSF-IF.A.1
3.2	Linear Functions	HSA-CED.A.2, HSA-REI.D.10, HSF-IF.B.5, HSF-IF.C.7a, HSF-LE.A.1b
3.3	Function Notation	HSA-CED.A.2, HSF-IF.A.1, HSF-IF.A.2, HSF-IF.C.7a, HSF-IF.C.9
3.4	Graphing Linear Equations in Standard Form	HSA-CED.A.2, HSF-IF.C.7a
3.5	Graphing Linear Equations in Slope-Intercept Form	HSA-CED.A.2, HSF-IF.B.4, HSF-IF.C.7a, HSF-LE.B.5
3.6	Transformations of Graphs of Linear Functions	HSF-IF.C.7a, HSF-BF.B.3
3.7	Graphing Absolute Value Functions	HSA-CED.A.2, HSA-REI.D.10, HSF-IF.C.7b, HSF-BF.B.3

### Chapter 4: Writing Linear Functions

4.1	Writing Equations in Slope-Intercept Form	HSA-CED.A.2, HSF-BF.A.1a, HSF-LE.A.1b, HSF-LE.A.2
4.2	Writing Equations in Point-Slope Form	HSA-CED.A.2, HSF-BF.A.1a, HSF-LE.A.1b, HSF-LE.A.2
4.3	Writing Equations of Parallel and Perpendicular Lines	HSA-CED.A.2, HSF-LE.A.2
4.4	Scatter Plots and Lines of Fit	HSF-LE.B.5, HSS-ID.B.6a, HSS-ID.B.6c, HSS-ID.C.7
4.5	Analyzing Lines of Fit	HSF-LE.B.5, HSS-ID.B.6a, HSS-ID.B.6b, HSS-ID.B.6c, HSS-ID.C.7, HSS-ID.C.8, HSS-ID.C.9
4.6	Arithmetic Sequences	HSF-IF.A.3, HSF-BF.A.1a, HSF-BF.A.2, HSF-LE.A.2
4.7	Piecewise Functions	HSA-CED.A.2, HSA-REI.D.10, HSF-IF.C.7b

### Chapter 5: Solving Systems of Linear Equations

5.1	Solving Systems of Linear Equations by Graphing	HSA-CED.A.3, HSA-REI.C.6
5.2	Solving Systems of Linear Equations by Substitution	HSA-CED.A.3, HSA-REI.C.6
5.3	Solving Systems of Linear Equations by Elimination	HSA-CED.A.3, HSA-REI.C.5, HSA-REI.C.6
5.4	Solving Special Systems of Linear Equations	HSA-CED.A.3, HSA-REI.C.6
5.5	Solving Equations by Graphing	HSA-CED.A.3, HSA-REI.D.11
5.6	Graphing Linear Inequalities in Two Variables	HSA-CED.A.3, HSA-REI.D.12
5.7	Systems of Linear Inequalities	HSA-CED.A.3, HSA-REI.D.12

## Content Overview

## Michigan Standard(s) Correlation

### Chapter 6: Exponential Functions and Sequences

6.1	Properties of Exponents	HSN-RN.A.2
6.2	Radicals and Rational Exponents	HSN-RN.A.1, HSN-RN.A.2
6.3	Exponential Functions	HSA-CED.A.2, HSF-IF.B.4, HSF-IF.C.7e, HSF-IF.C.9, HSF-BF.A.1a, HSF-BF.B.3, HSF-LE.A.1a, HSF-LE.A.2
6.4	Exponential Growth and Decay	HSA-SSE.B.3c, HSA-CED.A.2, HSF-IF.C.7e, HSF-IF.C.8b, HSF-BF.A.1a, HSF-LE.A.1c, HSF-LE.A.2
6.5	Solving Exponential Equations	HSA-CED.A.1, HSA-REI.A.1, HSA-REI.D.11
6.6	Geometric Sequences	HSF-IF.A.3, HSF-BF.A.2, HSF-LE.A.2
6.7	Recursively Defined Sequences	HSF-IF.A.3, HSF-BF.A.1a, HSF-BF.A.2, HSF-LE.A.2

### Chapter 7: Polynomial Equations and Factoring

7.1	Adding and Subtracting Polynomials	HSA-APR.A.1
7.2	Multiplying Polynomials	HSA-APR.A.1
7.3	Special Products of Polynomials	HSA-APR.A.1
7.4	Solving Polynomial Equations in Factored Form	HSA-APR.B.3, HSA-REI.B.4b
7.5	Factoring $x^2 + bx + c$	HSA-SSE.A.2, HSA-SSE.B.3a
7.6	Factoring $ax^2 + bx + c$	HSA-SSE.A.2, HSA-SSE.B.3a
7.7	Factoring Special Products	HSA-SSE.A.2, HSA-SSE.B.3a
7.8	Factoring Polynomials Completely	HSA-SSE.A.2, HSA-SSE.B.3a

### Chapter 8: Graphing Quadratic Functions

8.1	Graphing $f(x) = ax^2$	HSA-CED.A.2, HSF-IF.C.7a, HSF-BF.B.3
8.2	Graphing $f(x) = ax^2 + c$	HSA-CED.A.2, HSF-IF.C.7a, HSF-BF.B.3
8.3	Graphing $f(x) = ax^2 + bx + c$	HSA-CED.A.2, HSF-IF.C.7a, HSF-IF.C.9
8.4	Graphing $f(x) = a(x - h)^2 + k$	HSA-CED.A.2, HSF-IF.B.4, HSF-BF.A.1a, HSF-BF.B.3
8.5	Using Intercept Form	HSA-SSE.B.3a, HSA-APR.B.3, HSA-CED.A.2, HSF-IF.B.4, HSF-IF.C.8a, HSF-BF.A.1a
8.6	Comparing Linear, Exponential, and Quadratic Functions	HSF-IF.B.6, HSF-BF.A.1a, HSF-LE.A.3

## Content Overview

## Michigan Standard(s) Correlation

### Chapter 9: Solving Quadratic Equations

9.1	Properties of Radicals	HSN-RN.A.2, HSN-RN.B.3
9.2	Solving Quadratic Equations by Graphing	HSA-REI.D.11, HSF-IF.C.7a
9.3	Solving Quadratic Equations Using Square Roots	HSA-CED.A.1, HSA-CED.A.4, HSA-REI.B.4b
9.4	Solving Quadratic Equations by Completing the Square	HSA-SSE.B.3b, HSA-CED.A.1, HSA-REI.B.4a, HSA-REI.B.4b, HSF-IF.C.8a
9.5	Solving Quadratic Equations Using the Quadratic Formula	HSA-CED.A.1, HSA-REI.B.4a, HSA-REI.B.4b
9.6	Solving Nonlinear Systems of Equations	HSA-REI.C.7, HSA-REI.D.11

### Chapter 10: Radical Functions and Equations

10.1	Graphing Square Root Functions	HSA-CED.A.2, HSF-IF.B.4, HSF-IF.B.6, HSF-IF.C.7b, HSF-IF.C.9
10.2	Graphing Cube Root Functions	HSA-CED.A.2, HSF-IF.B.4, HSF-IF.B.6, HSF-IF.C.7b, HSF-IF.C.9
10.3	Solving Radical Equations	HSA-CED.A.1
10.4	Inverse of a Function	HSF-BF.B.4a

### Chapter 11: Data Analysis and Displays

11.1	Measures of Center and Variation	HSS-ID.A.3
11.2	Box-and-Whisker Plots	HSS-ID.A.1, HSS-ID.A.3
11.3	Shapes of Distributions	HSS-ID.A.1, HSS-ID.A.2, HSS-ID.A.3
11.4	Two-Way Tables	HSS-ID.B.5
11.5	Choosing a Data Display	HSS-ID.A.1

**Students will also be expected to show proficiency in the Standards for Mathematical Practice:**

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