

## Grade 8H End of Unit 3 Assessment Study Guide

**Subject:** Advanced Math (Algebra 1)

**Date & Time of Test:** Wednesday, February 19<sup>th</sup>, 2020

**Duration of Test:** 80 minutes

**You are expected to study from:** All materials mentioned

### 1. Textbook:

Chapters	Topic	Pages
5-1	<b>Solving Inequalities by Addition and Subtraction</b> <ul style="list-style-type: none"><li>• Solve linear inequalities by using addition</li><li>• Solve inequalities by using subtraction</li></ul>	289-293
5-2	<b>Solving Inequalities by Multiplication and Division</b> <ul style="list-style-type: none"><li>• Solve linear inequalities by using addition</li><li>• Solve inequalities by using subtraction</li></ul>	296-300
5-3	<b>Solving Multi-Step Inequalities</b> <ul style="list-style-type: none"><li>• Solve linear inequalities involving more than one operation</li><li>• Solve linear inequalities involving the Distributive Property</li></ul>	302-306
5-4	<b>Solving Compound Inequalities</b> <ul style="list-style-type: none"><li>• Solve compound inequalities containing the word <u>and</u>, and graph their solution set</li><li>• Solve compound inequalities containing the word <u>or</u>, and graph their solution set</li></ul>	310-314
5-5	<b>Inequalities Involving Absolute Value</b> <ul style="list-style-type: none"><li>• Solve and graph absolute value inequalities (<math>&gt;</math>)</li><li>• Solve and graph absolute value inequalities (<math>&lt;</math>)</li></ul>	316-319
5-6	<b>Graphing Inequalities in Two Variables</b> <ul style="list-style-type: none"><li>• Graph linear inequalities on the coordinate plane</li><li>• Solve inequalities by graphing</li></ul>	321-325
6-1	<b>Graphing Systems of Equations</b> <ul style="list-style-type: none"><li>• Determine the number of solutions a system of equations has</li><li>• Solve systems of linear equations by graphing</li></ul>	339-344
6-2	<b>Substitution</b> <ul style="list-style-type: none"><li>• Solve systems of equations by using substitution</li><li>• Solve real-world problems involving systems of equations by using substitution</li></ul>	348-352

6-3	<b>Elimination</b> <ul style="list-style-type: none"> <li>Solve systems of equations by using elimination with addition</li> <li>Solve systems of equations by using elimination with subtraction</li> </ul>	354-359
6-4	<b>Elimination Using Multiplication</b> <ul style="list-style-type: none"> <li>Solve systems of equations by using elimination with addition</li> <li>Solve real-world problems involving systems of equations</li> </ul>	361-365
<b>2. Types of Questions:</b> <ol style="list-style-type: none"> <li>Multiple Choices.</li> <li>Definitions (<b>Matching or fill in the blank questions</b>)</li> <li>Calculations.</li> <li>Graphing.</li> <li>Word Problems.</li> </ol>		<b>3. You are expected to:</b> <ol style="list-style-type: none"> <li>Review mid-checks.</li> <li>Review homework.</li> <li>Review word problems.</li> <li>Review students' notes.</li> <li>Review PowerPoints (Google Classroom)</li> <li>IXL: K4, K5, K9, K14, T1, T3, U2, U6, U8, U10, U14</li> </ol>

**Keywords:** (**Definitions should not be memorized it should be understood**)

<b>Inequality</b> An open sentence that contains $<$ , $>$ , $\leq$ , or $\geq$			
$<$	$>$	$\leq$	$\geq$
- Less than - Fewer than	- Greater than - More than	- Less than or equal to - At most - No more than	- Greater than or equal to - At least - No less than
<b>Set-builder notation:</b> A more concise way of writing a solution set. For example, $\{x x \geq 20\}$ is read <i>the set of all numbers x such that x is greater or equal to 20.</i>			
* The Multiplication and Division Properties of Inequalities states that when multiplying or dividing both sides of an equality by a <b>negative number</b> , the direction of the inequality sign changes.			

## Compound Inequality

Two or more inequalities joined together by and or or.

\*A compound inequality containing and is only true if both inequalities are true. Its graph is where the graphs of the two inequalities overlap. This is called the **intersection** of the two graphs.

\*A compound inequality containing or is true if at least one of the inequalities is true. Its graph is the **union** of the graphs of the two inequalities.

\*If the variable is removed from both sides when solving an inequality:

- The solution set is the **empty set,  $\emptyset$**  if the inequality is a **false statement**
- The solution set is **all real numbers** if the inequality is a **true statement**

\*When graphing inequalities in two variables on a coordinate plane,

- $<$  and  $>$  means your line will be dashed ---
- $\leq$  and  $\geq$  means your line will be solid —
- $<$  and  $\leq$  means you shade below the line
- $>$  and  $\geq$  means you shade above the line

- It's useful to pick a test point on your graph to determine whether you correctly shaded (a true inequality means the point needs to be shaded, a false inequality means that it shouldn't).

## System of Equations:

Two or more equations that share variables.

A system of two linear equations can have one solution, an infinite number of solutions, or no solutions.

### Consistent:

If a system has at least one solution (the graphs intersect or are the same line).

- Independent if it has exactly one solution
- Dependent if it has an infinite number of solutions

### Inconsistent:

If a system has no solution (the graphs are parallel).

### Substitution:

A strategy of solving a system of equations that involves solving for one variable and using that solution (substituting) to find the other variable.

**Elimination:**

Using addition or subtraction to cancel a variable in the system to make it easier to solve for the other.