

## Clearview Regional High School District 2021 Summer Assignment Coversheet

<b>Course:</b>	<b>Honors Algebra 1</b>	
<b>Teacher(s):</b>	Miller, Wescott, Gunning, Paoletti	
<b>Due Date:</b>	<b>OPTIONAL (answers will be posted in late August)</b>	
<b>Purpose of Assignment:</b>	To assess the students understanding of concepts necessary for Honors Algebra I.	
<b>Description of Assignment:</b>	Students will solve problems involving fractions, integers, expressions, equations, inequalities and graphs. All problems are to be solved without the use of a calculator.	
<b>New Jersey Student Learning Standards covered:</b>	The Number System <b>MA.7.7.NS.A.1, MA.7.7.NS.A.2, MA.7.7.NS.A.3</b>	
	Expressions and Equations <b>MA.7.7.EE.A.1, MA.7.7.EE.A.2, MA.7.7.EE.A.3, MA.7.7.EE.A.4</b>	
	Ratios and Proportional Relationships <b>MA.7.7.RP.A.2, MA.7.7.RP.A.3</b>	
<b>Use of Assignment:</b>	This packet contains skills that students should have mastered prior to entering Honors Algebra I. Students can use this packet to gauge their understanding and readiness for the course.	
<b>Specific Expectations:</b>	Students are to try every problem. Students should also come to class with questions on any problems they did not understand.	
<b>Where to Locate Assignment:</b>	Clearview Website	
<b>Teacher Contact Information:</b>	Mrs. Jill Miller <a href="mailto:jmiller@clearviewregional.edu">jmiller@clearviewregional.edu</a>	Mrs. Karisa Wescott <a href="mailto:kwescott@clearviewregional.edu">kwescott@clearviewregional.edu</a>
	Mrs. Anne Paoletti <a href="mailto:apaoletti@clearviewregional.edu">apaoletti@clearviewregional.edu</a>	Mrs. Tara Gunning <a href="mailto:tgunning@clearviewregional.edu">tgunning@clearviewregional.edu</a>
<b>Additional Help/ Resource(s):</b>	Learnzillion.com, mathisfun.com, khanacademy.org, analyzemath.com, freemathhelp.com, analyzemath.com	

## Operations with Rational Numbers

Add, Subtract, Multiply or Divide.

1] $-12 + 4 = \boxed{-8}$	2] $-15 + (-7) = \boxed{-22}$
3] $-23 - 56 = \boxed{-79}$	4] $17 - 43 = \boxed{-26}$
5] $-25 - (-12) = \boxed{-13}$ $-25 + 12$	6] $42 + (-13) = \boxed{29}$
7] $-8(-9) = \boxed{72}$	8] $\frac{-54}{-6} = \boxed{9}$
9] $-18 - (-24) = \boxed{6}$ $-18 + 24$	10] $-32 - 81 = \boxed{-113}$
11] $-13 \cdot 11 = \boxed{-143}$	12] $-18.4 - 12.9 = \boxed{-31.3}$
13] $-33.58 \div 2.3 = \boxed{-14.6}$	14] $-8.3(-13.7) = \boxed{113.71}$
15] $-\frac{4}{5} + \frac{2}{3} = \boxed{-\frac{2}{15}}$ $-\frac{12}{15} + \frac{10}{15}$	16] $\frac{1}{2} - \frac{8}{9} = \boxed{-\frac{7}{18}}$ $\frac{9}{18} - \frac{16}{18}$
17] $-\frac{7}{11} - 3\frac{1}{3} = \boxed{-3\frac{32}{33}}$	18] $1\frac{4}{7} - (-2\frac{5}{6}) = \boxed{4\frac{17}{42}}$ $1\frac{24}{42} + 2\frac{35}{42} = 3\frac{59}{42} \Rightarrow 3 + 1\frac{17}{42}$
19] $\frac{25}{36} \cdot (-\frac{84}{56}) = \boxed{-\frac{15}{22}}$ <small><math>\frac{5}{2 \cdot 4} \cdot (-\frac{3 \cdot 28}{7 \cdot 8})</math></small>	20] $-1\frac{3}{4} \div (-1\frac{5}{16}) = \boxed{1\frac{1}{3}}$ $-\frac{7}{4} \div (-\frac{21}{16}) = \frac{7}{4} \times \frac{16}{21} = \frac{4}{3}$

## Order of Operations

Evaluate each expression.

$  \begin{aligned}  1] \quad & (-4) \cdot 6 + (-9 - 5) = \\  & = -24 + -14 \\  & = \boxed{-38}  \end{aligned}  $	$  \begin{aligned}  2] \quad & 9 \cdot 5 - 64 \div 16 + (-42) = \\  & = 45 - 4 - 42 \\  & = 41 - 42 \\  & = \boxed{-1}  \end{aligned}  $
$  \begin{aligned}  3] \quad & -7 + 4 + (3^3 - 12 \div 6) = \\  & = -7 + 4 + (27 - 2) \\  & = -3 + 25 \\  & = \boxed{22}  \end{aligned}  $	$  \begin{aligned}  4] \quad & 6 + (-18) - 7 \cdot 4 + 5^2 = \\  & = -12 - 28 + 25 \\  & = -40 + 25 \\  & = \boxed{-15}  \end{aligned}  $
$  \begin{aligned}  5] \quad & -72 \div 9 + (3^2 - 60) = \\  & = -8 + (9 - 60) \\  & = -8 - 51 \\  & = \boxed{-59}  \end{aligned}  $	$  \begin{aligned}  6] \quad & \frac{18 - 24 \div 4}{4^2 - (-4)} \\  & = \frac{18 - 6}{16 + 4} = \frac{12}{20} = \boxed{\frac{3}{5}}  \end{aligned}  $
$  \begin{aligned}  7] \quad & 5(-5 - 7) \div 15 + (-12) = \\  & = 5(-12) \div 15 + (-12) \\  & = -60 \div 15 + (-12) \\  & = -4 + (-12) \\  & = \boxed{-16}  \end{aligned}  $	$  \begin{aligned}  8] \quad & 5(14 - 42 \div 3) + 12 \cdot \frac{1}{4} \\  & = 5(14 - 14) + 3 \\  & = 5(0) + 3 \\  & = 0 + 3 \\  & = \boxed{3}  \end{aligned}  $
$  \begin{aligned}  9] \quad & -162 + [6(17 - 14)^2] \div 3 = \\  & = -162 + [6(3)^2] \div 3 \\  & = -162 + [6 \cdot 9] \div 3 \\  & = -162 + 54 \div 3 \\  & = -162 + 18 = \boxed{-144}  \end{aligned}  $	$  \begin{aligned}  10] \quad & \frac{4\{10 - (27 \div 9)\}}{(3 - 7)^2} \\  & = \frac{4[10 - 3]}{(-4)^2} = \frac{4[7]}{16} = \frac{28}{16} = \boxed{\frac{7}{4}}  \end{aligned}  $

## Variables and Expressions

Write an algebraic expression for each word phrase.

1] 4 less than $x$ $x - 4$	2] 5 times the sum of a number $b$ and 4 $5(b + 4)$
3] the sum of 15 and $m$ $15 + m$	4] 20 increased by a number $h$ $20 + h$
5] one third of a number $a$ $\frac{1}{3}a$ or $\frac{a}{3}$	6] the difference of 9 and a number $n$ $9 - n$
7] the quotient of 12 and $b$ $\frac{12}{b}$	8] 6 increased by the product of 3 and $p$ $6 + 3p$

## Substitution

Use substitution to determine whether the solution is correct.

1] $2x - 3 = 15$ ; $x = 9$ $2(9) - 3 = 15$ $18 - 3 = 15$ $15 = 15$ <i>yes</i>	2] $3b + 4 = -10$ ; $b = -4$ $3(-4) + 4 = -10$ $-12 + 4 = -10$ $-8 \neq -10$ <i>NO</i>
3] $4 - 2m = 8$ ; $m = -2$ $4 - 2(-2) = 8$ $4 + 4 = 8$ $8 = 8$ <i>yes</i>	4] $5p + 12 = 24$ ; $p = 2$ $5(2) + 12 = 24$ $10 + 12 = 24$ $22 \neq 24$ <i>NO</i>
5] $5a - 12 = -27$ ; $a = -3$ $5(-3) - 12 = -27$ $-15 - 12 = -27$ $-27 = -27$ <i>yes</i>	6] $20 - 4n = 32$ ; $n = -3$ $20 - 4(-3) = 32$ $20 + 12 = 32$ $32 = 32$ <i>yes</i>

## Evaluating Expressions

Evaluate each expression when  $a = 6$ ,  $b = -3$ ,  $c = -2$ , and  $d = \frac{1}{3}$ .

$  \begin{aligned}  &1] \ a + b - c \\  &= 6 + (-3) - (-2) \\  &= 3 - (-2) \\  &= 3 + 2 \\  &= \boxed{5}  \end{aligned}  $	$  \begin{aligned}  &2] \ 3a - 2b \\  &= 3(6) - 2(-3) \\  &= 18 + 6 \\  &= \boxed{24}  \end{aligned}  $
$  \begin{aligned}  &3] \ 4c - 3b - 9 \\  &= 4(-2) - 3(-3) - 9 \\  &= -8 + 9 - 9 \\  &= 1 - 9 \\  &= \boxed{-8}  \end{aligned}  $	$  \begin{aligned}  &4] \ -18d - 4a \\  &= -18\left(\frac{1}{3}\right) - 4(6) \\  &= -6 - 24 \\  &= \boxed{-30}  \end{aligned}  $
$  \begin{aligned}  &5] \ \frac{6a-12}{2c} \\  &= \frac{6(6) - 12}{2(-2)} = \frac{36 - 12}{-4} = \frac{24}{-4} \\  &= \boxed{-6}  \end{aligned}  $	$  \begin{aligned}  &6] \ ab - 7c - 30d \\  &= 6(-3) - 7(-2) - 30\left(\frac{1}{3}\right) \\  &= -18 + 14 - 10 \\  &= \underbrace{-4} - 10 \\  &= \boxed{-14}  \end{aligned}  $
$  \begin{aligned}  &7] \ -4a - 2b - 3c \\  &= -4(6) - 2(-3) - 3(-2) \\  &= -24 + 6 + 6 \\  &= -18 + 6 \\  &= \boxed{-12}  \end{aligned}  $	$  \begin{aligned}  &8] \ 2bc - ad \\  &= 2(-3)(-2) - 6\left(\frac{1}{3}\right) \\  &= 12 - 2 \\  &= \boxed{10}  \end{aligned}  $

## Solving Proportions

Solve each proportion below. Show all work.

<p>1) <math>\frac{x}{21} = \frac{3}{63}</math></p> $\frac{63x}{63} = \frac{63}{63}$ $\boxed{x=1}$	<p>2) <math>\frac{5}{x+1} = \frac{3}{12}</math></p> $60 = 3x + 3$ $\begin{array}{r} -3 \\ \hline 57 = 3x \end{array}$ $\frac{57}{3} = \frac{3x}{3} \quad \boxed{x=19}$
<p>3) <math>\frac{x}{5} = \frac{x+1}{10}</math></p> $10x = 5x + 5$ $\begin{array}{r} -5x \\ \hline 5x = 5 \end{array}$ $\frac{5x}{5} = \frac{5}{5} \quad \boxed{x=1}$	<p>4) <math>\frac{5}{2x} = \frac{3}{2x-1}</math></p> $5(2x-1) = 6x$ $10x - 5 = 6x$ $\begin{array}{r} -10x \\ \hline -5 = -4x \end{array}$ $\frac{-5}{-4} = \frac{-4x}{-4} \quad \boxed{x = \frac{5}{4}} \text{ or } 1\frac{1}{4}$
<p>5) <math>\frac{4}{5x} = \frac{2}{7}</math></p> $\frac{28}{10} = \frac{10x}{10}$ $\boxed{x = \frac{14}{5}} \text{ or } 2\frac{4}{5}$	<p>6) <math>\frac{3}{2x+5} = \frac{2}{x-4}</math></p> $3x - 12 = 4x + 10$ $\begin{array}{r} -4x \\ \hline -x - 12 = 10 \end{array}$ $\begin{array}{r} +12 \\ \hline -x = 22 \end{array}$ $\boxed{x = -22}$
<p>7) <math>\frac{-5}{x+3} = \frac{2}{x-4}</math></p> $-5(x-4) = 2(x+3)$ $\begin{array}{r} -5x + 20 = 2x + 6 \\ -2x \quad -2x \\ \hline -7x + 20 = 6 \end{array}$ $\begin{array}{r} -7x + 20 = 6 \\ -20 \quad -20 \\ \hline -7x = -14 \\ \frac{-7x}{-7} = \frac{-14}{-7} \\ \hline \boxed{x=2} \end{array}$	<p>8) <math>\frac{x-3}{x} = \frac{1}{4}</math></p> $4x - 12 = x$ $\begin{array}{r} -4x \\ \hline -12 = -3x \end{array}$ $\frac{-12}{-3} = \frac{-3x}{-3}$ $\boxed{x=4}$

## Distributing and Combining Like Terms

Simplify each expression.

1] $12a + 3b + 7a + 8b$ $= \boxed{19a + 11b}$	2] $-8n - 4m + 6n - 3m$ $= \boxed{-2n - 7m}$
3] $14x + 12y - 8 - 8x - 16y$ $= \boxed{6x - 4y - 8}$	4] $-6c - 15d + 12 - 2c + 15d - 18$ $= \boxed{-8c - 6}$
5] $3(5m - 8)$ $= \boxed{15m - 24}$	6] $4(2a - 3) + 7a$ $= 8a - 12 + 7a$ $= \boxed{15a - 12}$
7] $5(3m + 4n) + 6(m + 2n)$ $= 15m + 20n + 6m + 12n$ $= \boxed{21m + 32n}$	8] $3(4a - 2b) + 4(5a - b)$ $= 12a - 6b + 20a - 4b$ $= \boxed{32a - 10b}$
9] $6(2x - 3y) - 3(4x - 2y)$ $= 12x - 18y - 12x + 6y$ $= \boxed{-12y}$	10] $-2(3c - 4d) - 4(6c + 2d) + 6d$ $= -6c + 8d - 24c - 8d + 6d$ $= \boxed{-30c + 6d}$
11] $3(5m + 2) - 2(4m - 3n) + 6$ $= 15m + 6 - 8m + 6n + 6$ $= \boxed{7m + 6n + 12}$	12] $2(4x - 3y - 8) - 3(5x - 2y + 7)$ $= 8x - 6y - 16 - 15x + 6y - 21$ $= \boxed{-7x - 37}$

## Solving Equations

Solve each equation.

<p>1] <math>4n - 8 = 40</math>  <math>+8 +8</math>  <math>4n = 48</math>  <math>\frac{4n}{4} = \frac{48}{4}</math>     <math>n = 12</math></p>	<p>2] <math>\frac{3}{4}a - 12 = -3</math>  <math>+12 +12</math>  <math>(\frac{4}{3})\frac{3}{4}a = 9(\frac{4}{3})</math>     <math>a = 12</math></p>
<p>3] <math>-\frac{b}{4} + 7 = -10</math>  <math>-7 -7</math>  <math>(*) -\frac{b}{4} = -17 (-4)</math>     <math>b = 68</math></p>	<p>4] <math>-\frac{2}{5}m - 14 = -24</math>  <math>+14 +14</math>  <math>(\frac{5}{2})-\frac{2}{5}m = -10(\frac{5}{2})</math>     <math>m = 25</math></p>
<p>5] <math>-10c + 14 = 9</math>  <math>-14 -14</math>  <math>\frac{-10c}{-10} = \frac{-5}{-10}</math>  <math>c = \frac{1}{2}</math></p>	<p>6] <math>-13a - 29 = -12a + 2</math>  <math>+12a +12a</math>  <math>-a - 29 = 2</math>  <math>+29 +29</math>  <math>-a = 31</math>     <math>a = -31</math></p>
<p>7] <math>7z + 6 = 12z - 19</math>  <math>-12z -12z</math>  <math>-5z + 6 = -19</math>  <math>-6 -6</math>  <math>\frac{-5z}{-5} = \frac{-25}{-5}</math>     <math>z = 5</math></p>	<p>8] <math>8m - 20 = -3m + 35</math>  <math>+3m +3m</math>  <math>11m - 20 = 35</math>  <math>+20 +20</math>  <math>\frac{11m}{11} = \frac{55}{11}</math>     <math>m = 5</math></p>
<p>9] <math>12n + 15 = 23 + 8n</math>  <math>-8n -8n</math>  <math>4n + 15 = 23</math>  <math>-15 -15</math>  <math>\frac{4n}{4} = \frac{8}{4}</math>     <math>n = 2</math></p>	<p>10] <math>5(d - 6) = 8d + 18</math>  <math>5d - 30 = 8d + 18</math>  <math>-8d -8d</math>  <math>-3d - 30 = 18</math>  <math>+30 +30</math>  <math>\frac{-3d}{-3} = \frac{48}{-3}</math>  <math>d = -16</math></p>
<p>11] <math>-18x - 14 = -24x + 6</math>  <math>+24x +24x</math>  <math>6x - 14 = 6</math>  <math>+14 +14</math>  <math>\frac{6x}{6} = \frac{20}{6}</math>     <math>x = \frac{10}{3}</math> or <math>3\frac{1}{3}</math></p>	<p>12] <math>\frac{2}{3}(6x - 18) = -3x + 9</math>  <math>4x - 12 = -3x + 9</math>  <math>+3x +3x</math>  <math>7x - 12 = 9</math>  <math>+12 +12</math>  <math>\frac{7x}{7} = \frac{21}{7}</math>     <math>x = 3</math></p>



Solve each equation.

<p>13] <math>7a - 4 - 12a = 5(2a - 1)</math></p> $\begin{array}{r} -5a - 4 = 10a - 5 \\ -10a \quad -10a \\ -15a - 4 = -5 \\ \quad +4 \quad +4 \\ -15a = -1 \\ \frac{-15a}{-15} = \frac{-1}{-15} \end{array}$ <p style="text-align: right;"><math>a = \frac{1}{15}</math></p>	<p>14] <math>-4(3m - 8) = 2(5m + 3)</math></p> $\begin{array}{r} -12m + 32 = 10m + 6 \\ -10m \quad -10m \\ -22m + 32 = 6 \\ \quad -32 \quad -32 \\ -22m = -26 \\ \frac{-22m}{-22} = \frac{-26}{-22} \end{array}$ <p style="text-align: right;"><math>m = \frac{13}{11}</math> or <math>1\frac{2}{11}</math></p>
<p>15] <math>3y + 3 = 8(y + 9) - 2y</math></p> $\begin{array}{r} 3y + 3 = 8y + 72 - 2y \\ 3y + 3 = 6y + 72 \\ -6y \quad -6y \\ -3y + 3 = 72 \\ \quad -3 \quad -3 \\ -3y = 69 \\ \frac{-3y}{-3} = \frac{69}{-3} \end{array}$ <p style="text-align: right;"><math>y = -23</math></p>	<p>16] <math>4(3b + 1) = 2(b - 3) - 10</math></p> $\begin{array}{r} 12b + 4 = 2b - 6 - 10 \\ 12b + 4 = 2b - 16 \\ -2b \quad -2b \\ 10b + 4 = -16 \\ \quad -4 \quad -4 \\ 10b = -20 \\ \frac{10b}{10} = \frac{-20}{10} \end{array}$ <p style="text-align: right;"><math>b = -2</math></p>
<p>17] <math>3(2x + 5) - 15 = 4x + 22 - 9x</math></p> $\begin{array}{r} 6x + 15 - 15 \\ 6x = -5x + 22 \\ +5x \quad +5x \\ 11x = 22 \\ \frac{11x}{11} = \frac{22}{11} \end{array}$ <p style="text-align: right;"><math>x = 2</math></p>	<p>18] <math>3 - 6(-3x + 1) = 4 + 2x - 11</math></p> $\begin{array}{r} 3 + 18x - 6 \\ 18x - 3 = 2x - 7 \\ -2x \quad -2x \\ 16x - 3 = -7 \\ \quad +3 \quad +3 \\ 16x = -4 \\ \frac{16x}{16} = \frac{-4}{16} \end{array}$ <p style="text-align: right;"><math>x = -\frac{1}{4}</math></p>
<p>19] <math>14 + 6x - 44 = -3(x - 5)</math></p> $\begin{array}{r} 6x - 30 = -3x + 15 \\ +3x \quad +3x \\ 9x - 30 = 15 \\ \quad +30 \quad +30 \\ 9x = 45 \\ \frac{9x}{9} = \frac{45}{9} \end{array}$ <p style="text-align: right;"><math>x = 5</math></p>	<p>20] <math>\frac{5}{6}(24m - 42) = 4(2m - 3)</math></p> $\begin{array}{r} 20m - 35 = 8m - 12 \\ -8m \quad -8m \\ 12m - 35 = -12 \\ \quad +35 \quad +35 \\ 12m = 23 \\ \frac{12m}{12} = \frac{23}{12} \end{array}$ <p style="text-align: right;"><math>m = \frac{23}{12}</math> or <math>1\frac{11}{12}</math></p>

# Equations, Tables, and Graphs

Complete each table, then graph.

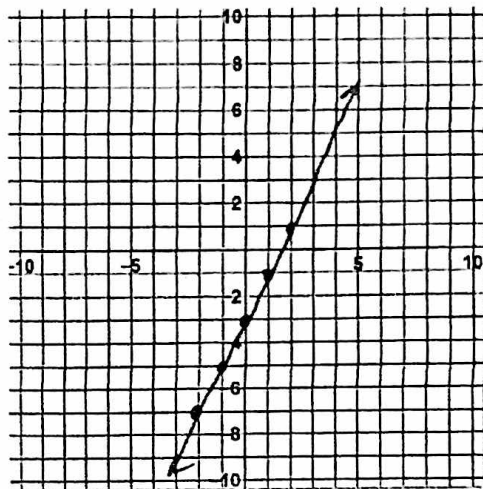
**Problem**

**Work**

**Graph**

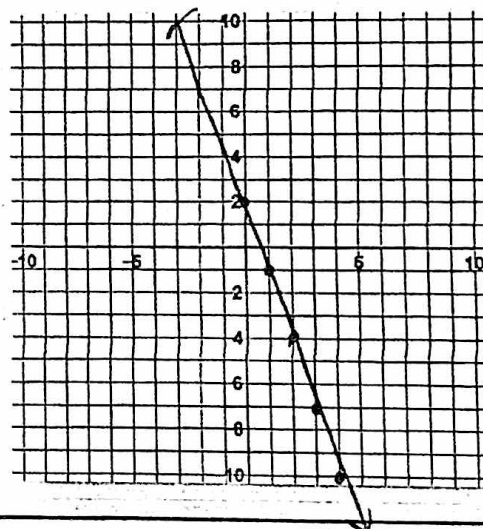
1]  $y = 2x - 3$

x	y
-2	-7
-1	-5
0	-3
1	-1
2	1



2]  $y = -3x + 2$

x	y
0	2
1	-1
2	-4
3	-7
4	-10



3]  $-4x + y = 1$   
 $\quad +4x \quad +4x$

$y = 4x + 1$

CHOOSE YOUR OWN VALUES FOR X ☺

x	y
-1	-3
0	1
1	5
2	9

