



I Can Do This! Systems of Equations – Grade Eight

Attachment F Practice Exercises

Name: _____ Date: _____

Directions: Find the solution for each pair of equations.

1. $y = 2x + 5$ and $y = -3x + 10$

2. $y = -3x - 4$ and $y = 4x - 32$

3. $y = -5x - 12$ and $3x + y = 14$

4. $x + 5y = 6$ and $x + 3y = 14$

5. $3x + y = 20$ and $x - 7y = -8$

6. $3x + 7y = 21$ and $3x + 5y = 15$

7. $y = 5x + 6$ and $y = 5x + 1$

8. $y = 2x + 3$ and $4x - 2y = -6$



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Attachment F (Continued) Practice Exercises Answer Key

1. $x = 1$ $y = 7$
2. $x = 4$ $y = -16$
3. $x = -13$ $y = 53$
4. $x = 26$ $y = -4$
5. $x = 6$ $y = 2$
6. $x = 0$ $y = 3$
7. empty set (parallel lines, no point of intersection)
8. The equations are equivalent. The graphs of each equation are the same lines or same set of points.

Note: Discuss the various methods which were used and which method was the most efficient to use. Many students will want to solve these graphically when substitution would be much more efficient.



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Attachment G

Systems of Linear Equations Homework Exercises

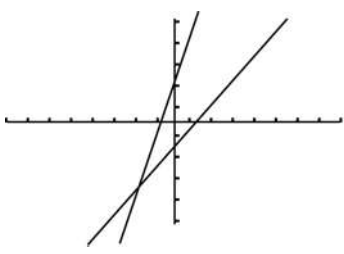
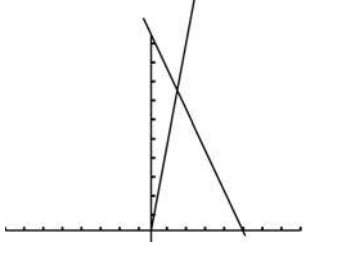
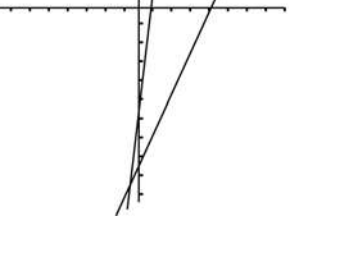
Directions: Solve each system of linear equations using different strategies.

System	Substitution	Tabular	Graph
$y = x - 3$ and $y = 3x + 5$			
$y = 5x$ and $2x + y = 21$			
$y = 7x - 12$ and $4x - 2y = 34$			
$12x - 7y = 20$ and $3x + 2y = 6$			

I Can Do This! Systems of Equations – Grade Eight

Attachment H

Systems of Linear Equations Homework Exercises Answer Key

	Substitution	Tabular	Graph															
$y = x - 3$ and $y = 3x + 5$	Substitution: $x - 3 = 3x + 5$ $-8 = 2x$ $-4 = x$ $y = -4 - 3$ $y = -7$ $(-4, -7)$	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>x</th> <th>$x-3$</th> <th>$3x+5$</th> </tr> </thead> <tbody> <tr><td>0</td><td>-3</td><td>5</td></tr> <tr><td>-2</td><td>-5</td><td>-1</td></tr> <tr><td>-3</td><td>-6</td><td>-4</td></tr> <tr><td>-4</td><td>-7</td><td>-7</td></tr> </tbody> </table>	x	$x-3$	$3x+5$	0	-3	5	-2	-5	-1	-3	-6	-4	-4	-7	-7	
x	$x-3$	$3x+5$																
0	-3	5																
-2	-5	-1																
-3	-6	-4																
-4	-7	-7																
$y = 5x$ and $2x + y = 21$	Substitution: $2x + 5x = 21$ $7x = 21$ $x = 3$ $y = 5(3)$ $(3, 15)$	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>x</th> <th>$5x$</th> <th>$21-2x$</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>21</td></tr> <tr><td>1</td><td>5</td><td>19</td></tr> <tr><td>2</td><td>10</td><td>16</td></tr> <tr><td>3</td><td>15</td><td>15</td></tr> </tbody> </table>	x	$5x$	$21-2x$	0	0	21	1	5	19	2	10	16	3	15	15	
x	$5x$	$21-2x$																
0	0	21																
1	5	19																
2	10	16																
3	15	15																
$y = 7x - 12$ and $4x - 2y = 34$	Substitution: $4x - 2(7x-12) = 34$ $4x - 14x + 24 = 34$ $-10x = 10$ $x = -1$ $y = 7(-1)-12$ $(-1, -19)$	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>x</th> <th>$7x-12$</th> <th>$2x-17$</th> </tr> </thead> <tbody> <tr><td>0</td><td>-12</td><td>-17</td></tr> <tr><td>2</td><td>-5</td><td>-15</td></tr> <tr><td>1</td><td>2</td><td>-13</td></tr> <tr><td>-1</td><td>-19</td><td>-19</td></tr> </tbody> </table>	x	$7x-12$	$2x-17$	0	-12	-17	2	-5	-15	1	2	-13	-1	-19	-19	
x	$7x-12$	$2x-17$																
0	-12	-17																
2	-5	-15																
1	2	-13																
-1	-19	-19																
$12x - 7y = 20$ and $3x + 2y = 6$	Linear Combination: $12x - 7y = 20$ $-12x - 8y = -24$ <hr style="width: 20%; margin: 5px auto;"/> $-15y = -4$ $y = \frac{4}{15}$ $3x + 2\left(\frac{4}{15}\right) = 6$ $3x = \frac{90}{15} - \frac{8}{15}$ $x = \left(\frac{1}{3}\right)\left(\frac{82}{15}\right)$ $\left(\frac{82}{45}, \frac{4}{15}\right)$	<p style="text-align: center;"><i>This system of equations can be solved using a table, however it is not an easy task as fractions are involved.</i></p>	