Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table #: \_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_

**5.3A Solving Systems of Linear Equations by Elimination Method\_Classwork**

*Objective: solve systems of two linear equations in two variables algebraically by using the elimination method. CCSS: 8.EE.8b*

*HW: (5.3A) p. 221 #4 - 13 – do not forget to* ***√*** *your answers on p. A26*

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| --- | --- | --- | --- | --- |
| Do the following problems

|  |  |  |  |
| --- | --- | --- | --- |
| 1. $30-30=$
 | 1. $\frac{1}{2}-\frac{1}{2}=$
 | 1. $-14+14=$
 | 1. $-\frac{3}{5}+\frac{3}{5}=$
 |

Do you see a relationship between each problem? |

In systems of equations where coefficient (the number in front of the variable) of x or y terms are *additive inverses*, you can eliminate one variable and solve the remaining variable. In order to do the elimination method, the systems must be in standard form (Ax + By = C). Make sure to rewrite equations in standard form before using the elimination method.

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| --- | --- | --- | --- | --- |
| Look at each system and identify which variable you would eliminate first.

|  |  |
| --- | --- |
| 1)$$7x+4y=-2$$$$3x-4y=12$$Eliminate the \_\_\_\_variable because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 2)$$-5x+2y=-12$$$$5x+8y=-24$$Eliminate the \_\_\_\_variable because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 3)$$x=y-11$$$$2x+y=19$$Eliminate the \_\_\_\_variable because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 4)$$-6x+5y=1$$$$ 6x-4y=10$$Eliminate the \_\_\_\_variable because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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**EXAMPLE PROBLEMS** – Solve the system of linear equations by elimination

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| --- | --- |
| 1)$$ 3x-y=14$$$$-3x+4y=16$$Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 2)$$2y=x+7$$$$3x+2y=3$$Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**PRACTICE PROBLEMS**

|  |
| --- |
| 1)$$ 2x-y=9$$$$ 4x+y=21$$Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 2) $$ -5x+2y=13$$$$ y=-5x-1$$Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 3) $$ 3x+4y=-6$$$$ 7x+4y=-14$$Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**WARM-UP**

|  |  |
| --- | --- |
| 1. $\frac{3}{4}c-\frac{1}{4}c+3=7$
 | 1. $5\left(2y-y\right)+y=-6$
 |