Unit: Systems of Equations
Student Handout 5

Name _____

Date _____Pd_____

SOLVING SYSTEMS BY ELIMINATION

Another method to solve systems of equations is known as elimination. In cases where the variables in two equations have opposite coefficients, we can solve the system with the following steps:

SOLVING BY ELIMINATION

- Line up the like _____ in the equations.
- _____ the equations to _____ one variable and solve for the other.
- _____ your answer into one of the original equations to solve for the other variable.
- Write your variables as an _____ pair and _____ your answer.

Use the method of elimination to solve each of the systems of equations below.

1. $-2x + 4y = 4$ $3x - 4y = 2$	2. $6x + 2y = 4$ $-6x - 5y = -28$
✓CHECK:	✓CHECK:
3. $4x - 7y = 47$ $6x + 7y = -17$	4. $5x + 2y = 18$ $-5x + 5y = 45$
✓CHECK:	✓CHECK:

In situations where neither of the variables in the two equations have opposite coefficients, it may be necessary to _____ one equation by a constant in order to create opposite terms.

When multiplying an equation by a constant, remember to multiply _____ term within the equation!

5. $-x + 2y = -13$ $2x + 3y = 12$	6. $4x - y = -19$ $-2x - 5y = -29$
✓CHECK:	✓CHECK:
7. $-3x + y = -8$ $4x + 3y = 28$	8. $6x - 3y = -3$ $-5x + 6y = 41$
✓CHECK:	✓CHECK:

Apply your knowledge of the elimination method to answer the question below.

9. Paulo is solving the system of equations shown and says that the first step is to add the equations together to eliminate the y variables.

$$3x + 4y = 26$$
$$2x + 4y = 28$$

a. Describe Paulo's error.

b. What is a possible first step Paulo could take?

c. Find the solution to the system of equations.

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SOLVING SYSTEMS BY ELIMINATION

1. McKayla is using elimination to solve the system below and will first add the equations together.

$$5x - 2y = 42$$
$$-3x + 2y = -26$$

Which of the following shows the result of the two equations added together?

A. $8x = 16$
B. $2x = 16$
C. $2x = 68$
D. $8x = 68$

2. Beckett needs to solve the system of equations below using elimination.

$$-2x + 4y = -2$$
$$6x - y = 28$$

Which correctly describes the first step Beckett should take?

A. Multiply each term in the 1st equation by -3
B. Multiply each term in the 1st equation by 3
C. Multiply each term in the 2nd equation by -4
D. Both B and C would work

In 3-7, solve each system using elimination. Use the answer bank to check your solutions. Not all choices will be used.

(-5, 6)	(4, 6)	(-6, -4)	(-4, 3)	
(-2, 2)	(1, 5)	(3, -4)	(2, -2)	(1, 6)

3.

$$9x - 3y = -42$$
$$-9x + 8y = 22$$

_____

4.

$$2x + 4y = 14$$
$$3x - 4y = -39$$

_____

5.

$$-5x - y = 8$$
$$5x - 3y = -16$$

_____

6.

$$8x + 2y = 20$$
$$-4x + y = 2$$

_____

7.

$$-3x - 2y = -1$$
$$4x + 6y = -12$$

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