

5D Systems of Equation: Elimination

Name: _____ Per: _____

SHOW YOUR WORK FOR FULL CREDIT. NO WORK, NO CREDIT. NO WORK IN PEN.

Use the **ELIMINATION** method to solve the systems (rewrite as needed). The first one is done for you.

Add the equations to eliminate the y and find x.

$$\begin{array}{r} \text{Ex: } \left\{ \begin{array}{l} 3x + 3y = 6 \\ 5x - 3y = 18 \end{array} \right. \\ \hline 8x = 24 \\ x = 3 \end{array}$$

$$1. \left\{ \begin{array}{l} -4x - 2y = 2 \\ 16x + 2y = 10 \end{array} \right.$$

$$2. \left\{ \begin{array}{l} -x + 4y = -10 \\ 7x + 4y = 22 \end{array} \right. \quad \text{Hint: Multiply one of the equations by a negative.}$$

Now, let's find y.

$$\begin{array}{r} 3(3) + 3y = 6 \\ 9 + 3y = 6 \\ \underline{-9} \quad = -9 \\ 3y = -3 \\ y = -1 \end{array}$$

Solution: (3, -1)

$$\begin{array}{l} \text{Check : } 3(3) + 3(-1) = 6 \\ \quad \quad 9 - 3 = 6 \quad \checkmark \\ \quad \quad 5(3) - 3(-1) = 18 \\ \quad \quad 15 + 3 = 18 \quad \checkmark \end{array}$$

Solution: _____

Check :

Solution: _____

Check :

$$3. \left\{ \begin{array}{l} 6x + 4y = 12 \\ 5x - 4y = 10 \end{array} \right.$$

$$4. \left\{ \begin{array}{l} -8x - 2y = -4 \\ -6x + y = 7 \end{array} \right.$$

Hint: Make the x's or y's have the same coefficient.

$$5. \left\{ \begin{array}{l} x - y = 10 \\ 7x + 5y = 22 \end{array} \right.$$

Solution: _____

Check :

Solution: _____

Check :

Solution: _____

Check :

$$6. \left\{ \begin{array}{l} 2x + 2y = 17 \\ -4x + 2y = 20 \end{array} \right.$$

$$7. \left\{ \begin{array}{l} -2x - y = 6 \\ 8x + 4y = -24 \end{array} \right.$$

$$8. \left\{ \begin{array}{l} -3x + 2y = 7 \\ x - y = 2 \end{array} \right.$$

Solution: _____

Check :

Solution: _____

Check :

Solution: _____

Check :

Choose any method to solve the system of equations.

$$9. \begin{cases} y = 6x + 2 \\ y = 2x - 6 \end{cases}$$

$$10. \begin{cases} y = -1 + 3x \\ y + x = 15 \end{cases}$$

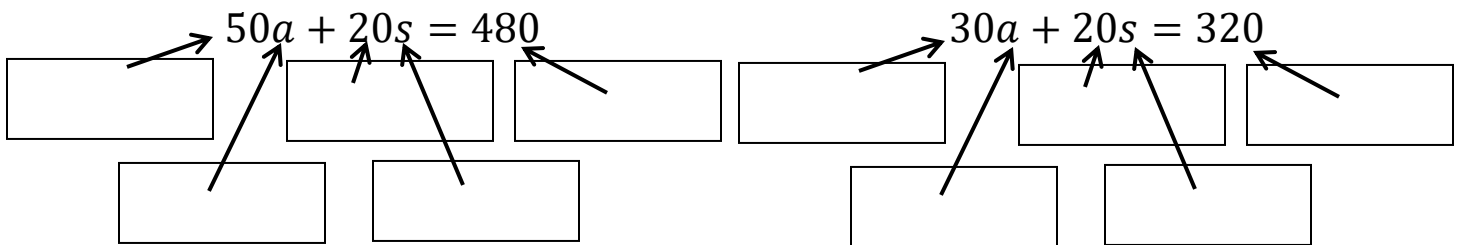
$$11. \begin{cases} x + y = 9 \\ 3x - y = 7 \end{cases}$$

Solution: _____
Check: _____

Solution: _____
Check: _____

Solution: _____
Check: _____

12. The following equations represent the money collected from VHMS concert tickets sales during two different evening performances. Describe each part of the equations in the boxes.



a. Solve for a and s .

b. $a =$ _____ $s =$ _____

c. What does your solution represent? _____

13. David and Chris are selling fruit for a school fundraiser. Customers bought only small boxes of oranges and large boxes of oranges. David sold 3 small boxes of oranges and 14 large boxes of oranges for a total of \$203. Chris sold 11 small boxes of oranges and 11 large boxes of oranges for a total of \$220.

a. Define your variables.

b. Write two equations

c. Solve the system.

d. Cost of one small box of oranges _____

Cost of one large box of oranges _____

