

LESSON

6-3

Practice A

Solving Systems by Elimination

HW Due Friday

Fill in the blanks to solve each system by elimination.

1.
$$\begin{cases} x + 3y = 14 \\ 2x - 3y = -8 \end{cases}$$

Add the equations:

$$\begin{array}{r} x + 3y = 14 \\ + 2x - 3y = 28 \\ \hline \end{array}$$

$3x + \underline{\hspace{1cm}} = 6$

$\underline{\hspace{1cm}} = 6$

$\div \underline{\hspace{1cm}} \div \underline{\hspace{1cm}}$

$x = \underline{\hspace{1cm}}$

Substitute $\underline{\hspace{1cm}}$ for x in one of the equations:

$x + 3y = 14$

$\underline{\hspace{1cm}} + 3y = 14$

$- \underline{\hspace{1cm}} - \underline{\hspace{1cm}}$

$3y = \underline{\hspace{1cm}}$

$\div 3 \div 3$

$y = \underline{\hspace{1cm}}$

Solution: $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

2.
$$\begin{cases} 2x + 2y = 4 \\ 3x + 2y = 7 \end{cases}$$

Subtract the equations:

$$\begin{array}{r} 2x + 2y = 4 \\ - (3x + 2y = 7) \\ \hline \end{array}$$

or

$2x + 2y = 4$

$-3x - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

$-x + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

$-x = \underline{\hspace{1cm}}$

$\div \underline{\hspace{1cm}} \div \underline{\hspace{1cm}}$

$x = \underline{\hspace{1cm}}$

Substitute $\underline{\hspace{1cm}}$ for x in one of the equations:

$3x + 2y = 7$

$3(\underline{\hspace{1cm}}) + 2y = 7$

$\underline{\hspace{1cm}} + 2y = 7$

$- \underline{\hspace{1cm}} - \underline{\hspace{1cm}}$

$2y = \underline{\hspace{1cm}}$

$\div \underline{\hspace{1cm}} \div \underline{\hspace{1cm}}$

$y = \underline{\hspace{1cm}}$

Solution: $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

3.
$$\begin{cases} 3x + 4y = 26 \\ x - 2y = -8 \end{cases}$$

Multiply the second equation by 2. Then, add the equations:

$$\begin{array}{r} 3x + 4y = 26 \\ 2(x - 2y = -8) \\ \hline \end{array}$$

$3x + 4y = 26$

$+ \underline{\hspace{1cm}}x - \underline{\hspace{1cm}}y = \underline{\hspace{1cm}}$

$\underline{\hspace{1cm}}x + 0 = \underline{\hspace{1cm}}$

$\underline{\hspace{1cm}}x = \underline{\hspace{1cm}}$

$\div \underline{\hspace{1cm}} \div \underline{\hspace{1cm}}$

$x = \underline{\hspace{1cm}}$

Substitute $\underline{\hspace{1cm}}$ for x in one of the equations:

$x - 2y = -8$

$\underline{\hspace{1cm}} - 2y = -8$

$- \underline{\hspace{1cm}} - \underline{\hspace{1cm}}$

$-2y = \underline{\hspace{1cm}}$

$\div \underline{\hspace{1cm}} \div \underline{\hspace{1cm}}$

$y = \underline{\hspace{1cm}}$

Solution: $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

Solve each system by elimination.

4.
$$\begin{cases} 3x - 2y = 1 \\ 2x + 2y = 14 \end{cases}$$

5.
$$\begin{cases} x + y = 4 \\ 3x + y = 16 \end{cases}$$

6.
$$\begin{cases} 3x + 2y = -26 \\ 2x - 6y = -10 \end{cases}$$

7. The sum of two numbers is -1 . When twice the first number and four times the second number are added, the sum is -10 . What are the two numbers?
