

Systems of Equations – Elimination

Bell Work:

1. Find the solution. Show all work.

$$7x + 4y = 18$$

$$7x - 6y = -62$$

2. What is elimination?

3. What is the slope of the line with an equation of $7x + 3y = -35$?

4. What is the function equation for the linear parent function?

Systems of Equations – Elimination

Solve by using elimination.

$$(3) \quad 8x + y = 34$$

$$5x - 3y = 43$$

$$24x + 3y = 102$$

$$+ \quad 5x - 3y = 43$$

$$29x = 145$$

$$x = 5$$

Multiply 1 equation, so that one of the coefficients are the same.

Add.

Solve.

Find the other answer.

$$8(5) + y = 43$$

$$40 + y = 43$$

$$y = 3$$

The answer: (5, 3)

Systems of Equations – Elimination

Solve by using elimination.

$$4x - 7y = 50$$

$$(-2) 2x + 3y = 12$$

Multiply 1 equation, so that one of the coefficients are the same.

Find the other answer.

$$4x - 7y = 50$$

$$+ \quad -4x - 6y = -24$$

$$-13y = 26$$

$$y = -2$$

Add.

Solve.

$$2x + 3(-2) = 12$$

$$2x - 6 = 12$$

$$2x = 18$$

$$x = 9$$

The answer: $(9, -2)$

Systems of Equations – Elimination

Solve by using elimination.

(5) $8x - y = -44$ *Multiply 1 equation, so that*

$2x + 5y = -32$ *one of the coefficients are*
the same.

Find the other answer.

$40x - 5y = -220$ *Add.*

You can multiply the top equation by 5 to eliminate the y, or the bottom equation by -4 to eliminate the x.

$2(-6) + 5y = -32$

$-12 + 5y = -32$

$+ 2x + 5y = -32$

$5y = -20$

$42x = -252$

$y = -4$

$x = -6$

Solve.

The answer: $(-6, -4)$

Systems of Equations – Elimination

Solve by using elimination.

$$(-2) \quad 5x + 6y = 86$$

$$10x - 3y = 7$$

$$-10x - 12y = -172$$

$$+ \quad 10x - 3y = 7$$

$$-15y = -165$$

$$y = 11$$

Multiply 1 equation, so that one of the coefficients are the same.

Add.

Solve.

You can multiply the top equation by -2 to eliminate the x, or the bottom equation by 2 to eliminate the y.

Find the other answer.

$$5x + 6(11) = 86$$

$$5x + 66 = 86$$

$$5x = 20$$

$$x = 4$$

The answer: (4, 11)

Systems of Equations – Elimination

Solve by using elimination.

$$(-4) \quad 3x + 8y = -69$$

$$12x + 5y = -114$$

$$-12x - 32y = 276$$

$$+ \quad 12x + 5y = -114$$

$$-27y = 162$$

$$y = -6$$

Multiply 1 equation, so that one of the coefficients are the same.

Add.

Solve.

Find the other answer.

$$12x + 5(-6) = -114$$

$$12x - 30 = -114$$

$$12x = -84$$

$$x = -7$$

The answer: $(-7, -6)$

Systems of Equations – Elimination

Solve by using elimination.

$$\begin{array}{l} 6x + 11y = -37 \\ (11) \quad x - y = 8 \end{array}$$

Multiply 1 equation, so that one of the coefficients are the same.

Find the other answer.

$$\begin{array}{r} 6x + 11y = -37 \\ + \quad 11x - 11y = 88 \\ \hline \end{array}$$

You can multiply the bottom equation by -6 to eliminate the x, or the bottom equation by 11 to eliminate the y.

$$3 - y = 8$$

$$-y = 5$$

$$y = -5$$

$$17x = 51$$

Solve.

$$x = 3$$

The answer: (3, -5)

Systems of Equations – Elimination

Assignment:

**FLEUNCY PRACTICE: Systems of Equations:
Elimination B Worksheet**