



Unit 5 Day 5: Solving Systems by Elimination

Problem 1:

Two happy face discs and one cube weigh 42 units. One happy face disc and one cube weigh 30 units.

 = 42 Units
  = 30 Units

What is the weight of each?

 = 12
  = 18

Explain your reasoning: subtract 30 from 42

Problem 2:

Three clocks and two reindeer cost \$4,750. Two clocks and two reindeer cost \$3,700.

$$\begin{array}{r} 4750 \\ - 3700 \\ \hline 1050 \end{array}$$
 = 4750
  = 3700

Find the value of each object:

 = 800
  = 1050

Explain your reasoning:

Problem 3:

~~DDDD~~
~~CC~~

value: \$700

~~ = 75
  = 475~~
~~ = 200
  = 475~~
 Total value: \$350 Total Value: \$475

Find the value of each object:

 = \$200
  = \$75

Explain your reasoning:

double a group, then subtracted one group from another.

$$\begin{array}{r} 700 \\ - 475 \\ \hline 225 \\ = 3 \text{ dogs} \\ 1 \text{ dog} = \$75 \end{array}$$

Practice Solving by Elimination:

What does it mean to solve a system by elimination? *multiply/divide one equation by a value in order to have the same amount of x's or y's. Then subtract/add equations.*

a.) Solve the system: $\begin{cases} 5x + 3y = -8 \\ 5x - 4y = 10 \end{cases}$

$$\begin{array}{r} 5x + 3y = -8 \\ -5x + 4y = -10 \\ \hline 7y = -18 \\ y = -2.57 \end{array}$$

$$\begin{array}{r} 5x + 3(-2.57) = -8 \\ 5x - 7.71 = -8 \\ +7.71 \quad +7.71 \\ \hline 5x = -0.29 \\ x = -0.058 \end{array}$$

$(-0.058, -2.57)$

* x's and y's must be vertically aligned *

b.) Solve the system: $\begin{cases} -2x + 3y = 7 \\ 2x + 9y = 10 \end{cases}$

$$\begin{array}{r} -2x + 3y = 7 \\ 2x + 9y = 20 \\ \hline 12y = 27 \\ y = 2.25 \end{array}$$

$$\begin{array}{r} x + 9(1.3) = 10 \\ x + 11.7 = 10 \\ -11.7 \quad -11.7 \\ \hline x = -1.7 \end{array}$$

$(-1.7, 1.3)$

c.) Solve the system:

$\begin{array}{ccc} \square & \square & \heartsuit \\ \square & \square & \heartsuit \\ \square & \square & \square \end{array} = 15$
 $\begin{array}{ccc} \square & \square & \heartsuit \\ \square & \square & \square \end{array} = 1$
 $\begin{array}{ccc} \square & \square & \heartsuit \\ \square & \square & \heartsuit \end{array} = 7$
 $\begin{array}{ccc} \square & \square & \heartsuit \\ \square & \square & \heartsuit \end{array} = 14$
 $\square = 1 \quad \heartsuit = 4$

Practice/Closure Day 5

Solve the system by elimination and one other method (substitution or graphing):

1)
$$\begin{aligned} -4x - 2y &= -12 \\ 4x + 8y &= -24 \end{aligned}$$

Elimination:

2)
$$\begin{aligned} x - y &= 11 \\ 2x + y &= 19 \end{aligned}$$

Elimination:

your choice
Substitution/Graphing:

your choice
Substitution/Graphing:

