4-14: Learning Goals

- Let's solve systems of equations.

4-14-1: Solving Systems Mentally

Solve these without writing anything down:

$$\begin{cases} x = 5 \\ y = x - 7 \end{cases}$$

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

$$\begin{cases} x = 8 \\ y = -11 \end{cases}$$

4-14-2: Challenge Yourself

Here are a lot of systems of equations:

A $\begin{cases} y = 4 \\ x = -5y + 6 \end{cases}$

B $\begin{cases} y = 7 \\ x = 3y - 4 \end{cases}$

C $\begin{cases} y = \frac{3}{2}x + 7 \\ x = -4 \end{cases}$

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

E $\begin{cases} y = -3x - 5 \\ y = 4x + 30 \end{cases}$

F $\begin{cases} y = 3x - 2 \\ y = -2x + 8 \end{cases}$

G $\begin{cases} y = 3x \\ x = -2y + 56 \end{cases}$

H $\begin{cases} x = 2y - 15 \\ y = -2x \end{cases}$

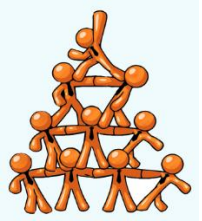
I $\begin{cases} 3x + 4y = 10 \\ x = 2y \end{cases}$

J $\begin{cases} y = 3x + 2 \\ 2x + y = 47 \end{cases}$

K $\begin{cases} y = -2x + 5 \\ 2x + 3y = 31 \end{cases}$

L $\begin{cases} x + y = 10 \\ x = 2y + 1 \end{cases}$

1. Without solving, identify 3 systems that you think would be the least difficult to solve and 3 systems that you think would be the most difficult to solve. Be prepared to explain your reasoning.



2. Choose 4 systems to solve. At least one should be from your "least difficult" list and one should be from your "most difficult" list.

4-14-3: Five Does Not Equal Seven

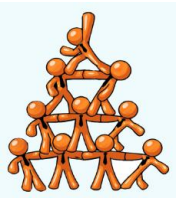
Tyler was looking at this system of equations:

$$\begin{cases} x + y = 5 \\ x + y = 7 \end{cases}$$

He said,

"Just looking at the system, I can see it has no solution. If you add two numbers, that sum can't be equal to two different numbers."

Do you agree with Tyler?

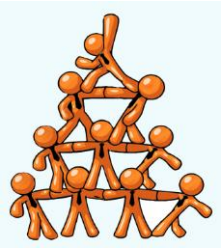


4-14: Lesson Synthesis

$$\begin{cases} x = 2 \\ y = 3x - 1 \end{cases}$$

$$\begin{cases} x = 2y + 4 \\ x = 9 - 3y \end{cases}$$

$$\begin{cases} x = 2y + 3 \\ y = 2x - 9 \end{cases}$$



4-14: Learning Targets

- I can use the structure of equations to help me figure out how many solutions a system of equations has.

4-14-4: Solve It

Solve this system of equations:

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