

Algebra I

9-5

Solving Systems: Linear Transformations

Solve each system. (pg 432)

$$1) \begin{cases} 2x + y = 8 \\ 3x - 2y = 5 \end{cases}$$

$$\begin{aligned} 2(3) + y &= 8 \\ 6 + y &= 8 \\ y &= 2 \end{aligned}$$

$$\{(3, 2)\}$$

$$\begin{aligned} 4x + 2y &= 16 \\ 3x - 2y &= 5 \\ \hline 7x &= 21 \end{aligned}$$

$$7x = 21$$

$$x = 3$$

When you substitute 3 for x , you can choose either of the two original equations. We picked $2x + y = 8$ because the numbers seemed smaller and easier to work with.

$$7) \begin{cases} 5p - 2q = 1 \\ 4p + 5q = 47 \end{cases}$$

$$\begin{aligned} 25p - 10q &= 5 \\ 8p + 10q &= 94 \\ \hline 33p &= 99 \end{aligned}$$

$$p = 3$$

$$\begin{aligned} 5(3) - 2q &= 1 \\ 15 - 2q &= 1 \\ 15 - 15 - 2q &= 1 - 15 \\ -2q &= -14 \\ -2 & \quad -2 \\ \hline q &= 7 \end{aligned}$$

$$\{(3, 7)\}$$

USE
9-5
Not
9-5 assignment

When starting, we could cancel the $5p$ and $4p$ using 20 as a common multiple, but then we would have had to multiply by 5 and -4 , instead of 5 and 2 to get the qs to match. Since 5 and 2 are smaller, we choose to eliminate the qs .

pg 432

2-24 even
28, 35