## Lesson 16: Elimination

* Let’s learn how to check our thinking when using elimination to solve systems of equations.

### 16.1: Which One Doesn’t Belong: Systems of Equations

Which one doesn’t belong?

A:

$\left\{\begin{matrix}3x+2y=49\\3x+1y=44\end{matrix}\right.$

B:

$\left\{\begin{matrix}3y−4x=19\\-3y+8x=1\end{matrix}\right.$

C:

$\left\{\begin{matrix}4y−2x=42\\-5y+3x=-9\end{matrix}\right.$

D:

$\left\{\begin{matrix}y=x+8\\3x+2y=18\end{matrix}\right.$

### 16.2: Examining Equation Pairs

Here are some equations in pairs. For each equation:

* Find the $x$-intercept and $y$-intercept of a graph of the equation.
* Find the slope of a graph of the equation.
1. $x+y=6$ and $2x+2y=12$
2. $3y−15x=-33$ and $y−5x=-11$
3. $5x+20y=100$ and $4x+16y=80$
4. $3x−2y=10$ and $4y−6x=-20$
5. What do you notice about the pairs of equations?
6. Choose one pair of equations and rewrite them into slope-intercept form ($y=mx+b$). What do you notice about the equations in this form?

### 16.3: Making the Coefficient

For each question,

* What number did you multiply the equation by to get the target coefficient?
* What is the new equation after the original has been multiplied by that value?
1. Multiply the equation $3x+4y=8$ so that the coefficient of $x$ is 9.
2. Multiply the equation $8x+4y=-16$ so that the coefficient of $y$ is 1.
3. Multiply the equation $5x−7y=11$ so that the coefficient of $x$ is -5.
4. Multiply the equation $10x−4y=17$ so that the coefficient of $y$ is -8.
5. Multiply the equation $2x+3y=12$ so that the coefficient of $x$ is 3.
6. Multiply the equation $3x−6y=14$ so that the coefficient of $y$ is 3.



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