**Solving systems of equations using **ELIMINATION:**

<table>
<thead>
<tr>
<th>STEPS:</th>
<th>EXAMPLE</th>
</tr>
</thead>
</table>
| A) Setup system properly:  
  \[ x + y = # \]  
  \[ x + y = # \] | \[ 4x + 5 = -3y \]  
 Solve: \[ 8x + 4y = -6 \] |
| B) Choose 1 variable to **eliminate**. | |
| C) Get the coefficients of that variable to be **opposite values** by multiplying or dividing through the entire equation(s). | |
| D) Combine the equations **vertically**, and solve for the remaining variable. | |
| E) Take that value & plug into either equation & solve for the 2\textsuperscript{nd} variable. | |
| F) State the solution as a point. \((x, y)\) | |
| G) Do a check for both equations. | |

**Homework:** On **SEPARATE PAPER** do the following exercises: (From Bumby Pg 436)

13) \[ x + y = 7 \]  
\[ x - y = 9 \]  
19) \[ x - y = 6 \]  
\[ 2x + 3y = 7 \]  
20) \[ 2x - 5y = 1 \]  
\[ 3x + 2 = 4y \]  
22) \[ 2x + y = 7 \]  
\[ \frac{3}{2}x - y = \frac{7}{2} \]
Solving Systems of Equations by Elimination

Solve each system by elimination.

1) \(-4x - 2y = -12\)
   \(4x + 8y = -24\)

2) \(4x + 8y = 20\)
   \(-4x + 2y = -30\)

3) \(x - y = 11\)
   \(2x + y = 19\)

4) \(-6x + 5y = 1\)
   \(6x + 4y = -10\)

5) \(-2x - 9y = -25\)
   \(-4x - 9y = -23\)

6) \(8x + y = -16\)
   \(-3x + y = -5\)

7) \(-6x + 6y = 6\)
   \(-6x + 3y = -12\)

8) \(7x + 2y = 24\)
   \(8x + 2y = 30\)

9) \(5x + y = 9\)
   \(10x - 7y = -18\)

10) \(-4x + 9y = 9\)
    \(x - 3y = -6\)

11) \(-3x + 7y = -16\)
    \(-9x + 5y = 16\)

12) \(-7x + y = -19\)
    \(-2x + 3y = -19\)
13) \[16x - 10y = 10 \]
\[-8x - 6y = 6\]

14) \[8x + 14y = 4\]
\[-6x - 7y = -10\]

15) \[-4x - 15y = -17\]
\[-x + 5y = -13\]

16) \[-x - 7y = 14\]
\[-4x - 14y = 28\]

17) \[-7x - 8y = 9\]
\[-4x + 9y = -22\]

18) \[5x + 4y = -30\]
\[3x - 9y = -18\]

19) \[-4x - 2y = 14\]
\[-10x + 7y = -25\]

20) \[3x - 2y = 2\]
\[5x - 5y = 10\]

21) \[5x + 4y = -14\]
\[3x + 6y = 6\]

22) \[2x + 8y = 6\]
\[-5x - 20y = -15\]

23) \[-14 = -20y - 7x\]
\[10y + 4 = 2x\]

24) \[3 + 2x - y = 0\]
\[-3 - 7y = 10x\]
Solving Systems of Equations by Elimination

Solve each system by elimination.

1) \(-4x - 2y = -12\)
   \(4x + 8y = -24\)
   \((6, -6)\)

2) \(4x + 8y = 20\)
   \(-4x + 2y = -30\)
   \((7, -1)\)

3) \(x - y = 11\)
   \(2x + y = 19\)
   \((10, -1)\)

4) \(-6x + 5y = 1\)
   \(6x + 4y = -10\)
   \((-1, -1)\)

5) \(-2x - 9y = -25\)
   \(-4x - 9y = -23\)
   \((-1, 3)\)

6) \(8x + y = -16\)
   \(-3x + y = -5\)
   \((-1, -8)\)

7) \(-6x + 6y = 6\)
   \(-6x + 3y = -12\)
   \((5, 6)\)

8) \(7x + 2y = 24\)
   \(8x + 2y = 30\)
   \((6, -9)\)

9) \(5x + y = 9\)
   \(10x - 7y = -18\)
   \((1, 4)\)

10) \(-4x + 9y = 9\)
    \(x - 3y = -6\)
    \((9, 5)\)

11) \(-3x + 7y = -16\)
    \(-9x + 5y = 16\)
    \((-4, -4)\)

12) \(-7x + y = -19\)
    \(-2x + 3y = -19\)
    \((2, -5)\)
13) $16x - 10y = 10$
   $-8x - 6y = 6$

   $(0, -1)$

14) $8x + 14y = 4$
   $-6x - 7y = -10$

   $(4, -2)$

15) $-4x - 15y = -17$
   $-x + 5y = -13$

   $(8, -1)$

16) $-x - 7y = 14$
   $-4x - 14y = 28$

   $(0, -2)$

17) $-7x - 8y = 9$
   $-4x + 9y = -22$

   $(1, -2)$

18) $5x + 4y = -30$
   $3x - 9y = -18$

   $(-6, 0)$

19) $-4x - 2y = 14$
   $-10x + 7y = -25$

   $(-1, -5)$

20) $3x - 2y = 2$
   $5x - 5y = 10$

   $(-2, -4)$

21) $5x + 4y = -14$
   $3x + 6y = 6$

   $(-6, 4)$

22) $2x + 8y = 6$
   $-5x - 20y = -15$

   Infinite number of solutions

23) $-14 = -20y - 7x$
   $10y + 4 = 2x$

   $(2, 0)$

24) $3 + 2x - y = 0$
   $-3 - 7y = 10x$

   $(-1, 1)$

Create your own worksheets like this one with Infinite Algebra 1. Free trial available at KutaSoftware.com