

# MORE PRACTICE WITH ELIMINATION

**QUESTION:** What do you do if there are no matching coefficients?

**ANSWER:** Use the distributive property  
to get matching or opposite  
coefficients

## EXAMPLES

<p><b>ANSWERS:</b></p> <p>1. <u>(3, 1)</u></p> <p>2. <u>(-1, 7)</u></p> <p>3. <u>(4, -2)</u></p> <p>4. <u>(-8, 5)</u></p> <p>5. <u>(-4, -3)</u></p>	<p>1. <math display="block">\begin{array}{r} x + 3y = 6 \quad \cdot 2 \\ 2x - 7y = -1 \\ \hline -2x - 6y = -12 \\ \hline -13y = -13 \\ y = 1 \end{array}</math></p> <p><math display="block">\begin{array}{l} x + 3(1) = 6 \\ x + 3 = 6 \\ x = 3 \end{array}</math></p> <p style="text-align: right;">(3, 1)</p>
	<p>2. <math display="block">\begin{array}{r} 9x + 3y = 12 \\ (2x + y = 5) \cdot 3 \\ \hline -6x + (-3y) = -15 \\ \hline 3x = -3 \\ x = -1 \end{array}</math></p> <p><math display="block">\begin{array}{l} 9(-1) + 3y = 12 \\ -9 + 3y = 12 \\ 3y = 21 \\ y = 7 \end{array}</math></p> <p style="text-align: right;">(-1, 7)</p>
	<p>3. <math display="block">\begin{array}{r} 3x - y = 14 \quad \cdot 4 \\ 5x + 4y = 12 \\ \hline 12x - 4y = 56 \\ 5x + 4y = 12 \\ \hline 17x = 68 \\ x = 4 \end{array}</math></p> <p><math display="block">\begin{array}{l} 3(4) - y = 14 \\ 12 - y = 14 \\ -y = 2 \\ y = -2 \end{array}</math></p> <p style="text-align: right;">(4, -2)</p>
	<p>4. <math display="block">\begin{array}{r} (x + y = -3) \cdot 2 \\ 5x - 2y = -50 \\ \hline 2x + 2y = -6 \\ \hline -7x = -56 \\ x = -8 \end{array}</math></p> <p><math display="block">\begin{array}{l} -8 + y = -3 \\ y = 5 \end{array}</math></p> <p style="text-align: right;">(-8, 5)</p>
	<p>5. <math display="block">\begin{array}{r} 3x - 3y = -3 \\ (2x - y = -5) \cdot 3 \\ \hline -6x + 3y = 15 \\ \hline -3x = 12 \\ x = -4 \end{array}</math></p> <p><math display="block">\begin{array}{l} 3(-4) - 3y = -3 \\ -12 - 3y = -3 \\ -3y = 9 \\ y = -3 \end{array}</math></p> <p style="text-align: right;">(-4, -3)</p>

**ANSWERS:**

6.  $\infty$

7.  $(-2, 3)$

8.  $(-2, 5)$

9.  $(3, -3)$

10.  $(1, -4)$

11.  $\emptyset$

12.  $(7, -5)$

6.  $(3x + y = 2) \cdot 2$   
 $6x + 2y = 4$   
 $-6x - 2y = -4$   
 $\hline 0 = 0$

$\infty$

7.  $(3x + 4y = 6) \cdot 2$   
 $7x + 8y = 10$   
 $-6x - 8y = -12$   
 $\hline x = -2$

$3(-2) + 4y = 6$   
 $-6 + 4y = 6$   
 $4y = 12$   
 $y = 3$

$(-2, 3)$

8.  $(3x + 3y = 9) \cdot 5$   
 $(5x + 4y = 10) \cdot 3$   
 $15x + 15y = 45$   
 $-15x - 12y = -30$   
 $\hline 3y = 15$   
 $y = 5$

$3x + 3(5) = 9$   
 $3x + 15 = 9$   
 $3x = -6$   
 $x = -2$

$(-2, 5)$

9.  $(2x - 4y = 18) \cdot 5$   
 $(-5x - 6y = 3) \cdot 2$   
 $10x - 20y = 90$   
 $-10x - 12y = 6$   
 $\hline -32y = 96$   
 $y = -3$

$2x - 4(-3) = 18$   
 $2x + 12 = 18$   
 $2x = 6$   
 $x = 3$

$(3, -3)$

10.  $(7x + 5y = -13) \cdot 2$   
 $(-2x - 7y = 26) \cdot 7$   
 $14x + 10y = -26$   
 $-14x - 49y = 182$   
 $\hline -39y = 156$   
 $y = -4$

$7x + 5(-4) = -13$   
 $7x + (-20) = -13$   
 $7x = 7$   
 $x = 1$

$(1, -4)$

11.  $(2x + 4y = 6) \cdot 3$   
 $(3x + 6y = 12) \cdot 2$   
 $6x + 12y = 18$   
 $-6x - 12y = -24$   
 $\hline 0 = -6$

$\emptyset$

12.  $(5x + 9y = -10) \cdot 7$   
 $(7x + 10y = -1) \cdot 5$   
 $35x + 63y = -70$   
 $-35x - 50y = 5$   
 $\hline 13y = -65$   
 $y = -5$

$5x - 45 = -10$   
 $5x = 35$   
 $x = 7$

$(7, -5)$