Elimination Tutorial

1. Check each variable for elimination potential. Variables that can be eliminated easily will be equal and opposite in the equations.
2. If they are not equal and opposite, multiply each equation by the factor necessary to create equal and opposite variables.
3. When equal and opposite equations have been identified, add the equations vertically to eliminate the equal and opposite variable.
4. Solve the resulting equation for the value of the remaining variable.

5. Return to one of the original equations and substitute the value of the known variable into the equation.
6. After substituting the known variable, solve for the value of the unknown variable.

7. Verify that your solution is correct.

Problem #1 $x + 3y = 3$ $-x + 5y = 13$	Problem #2 $4x + 2y = 18$ $3x - 2y = 10$	Problem #3 $4x + 3y = 22$ $4x + 5y = 34$
Problem #4 $3x + 2y = 14$ $x + 2y = 10$	Problem #5 $4x + 3y = 31$ $4x - 5y = -9$	Problem #6 $6x + 2y = 20$ $4x - 2y = 10$
Problem #7 $4x + 3y = 10$ $-2x - 5y = -12$	Problem #8 $3x + 2y = 12$ $4x - 4y = -4$	Problem #9 $2x + 3y = 1$ $6x + 2y = 10$
Problem #10 $5x - 2y = 7$ $3x - 4y = 7$	Problem #11 $4x + 3y = -3$ $2x - 5y = 5$	Problem #12 $-\frac{4}{2}x + \frac{3}{2}y = \frac{2}{2}$ $2x + 5y = -14$
Problem #13 $2x + 3y = 12$ $3x - 2y = 5$	Problem #14 $4x + 3y = 8$ $6x - 5y = -26$	Problem #15 $\frac{x}{2} + \frac{y}{3} = \frac{7}{6}$ $\frac{x}{3} - \frac{y}{4} = -\frac{1}{6}$

Solutions

Problem #1: $(-3,2)$	Problem #2: $(4,1)$	Problem #3: $(1,6)$
Problem #4: $(2,4)$	Problem #5: $(4,5)$	Problem #6: $(3,1)$
Problem #7: $(1,2)$	Problem #8: $(2,3)$	Problem #9: $(2,-1)$
Problem #10: $(1,-1)$	Problem #11: $(0,-1)$	Problem #12: $(-2,-2)$
Problem #13: $(3,2)$	Problem #14: $(-1,4)$	Problem #15: $(1,2)$