

## Substitution/Elimination

Solve the system by substitution.

1.  $\begin{cases} x + y = 5 \\ 3x + 2y = 12 \end{cases}$
2.  $\begin{cases} x + 2y = -1 \\ 2x - 4y = 6 \end{cases}$
3.  $\begin{cases} 4x - y = 2 \\ -3x + 2y = 6 \end{cases}$
4.  $\begin{cases} -2x - 2y = 1 \\ x + y = 1 \end{cases}$
5.  $\begin{cases} 3x + 2y = 0 \\ -x + 3y = 0 \end{cases}$
6.  $\begin{cases} x + y = 5 \\ 3x + 3y = 12 \end{cases}$
7.  $\begin{cases} 3x + 2y = 7 \\ -x + y = 1 \end{cases}$
8.  $\begin{cases} -x + 2y = -4 \\ 3x - 6y = 12 \end{cases}$
9.  $\begin{cases} 3x + y = 5 \\ 9x + 3y = 1 \end{cases}$
10.  $\begin{cases} 10x + 10y = 10 \\ 5x - 5y = 10 \end{cases}$
11.  $\begin{cases} 2x + 6y = 4 \\ 3x + 9y = 6 \end{cases}$
12.  $\begin{cases} 5x + 4y = 4 \\ 3x + 2y = 3 \end{cases}$
13.  $\begin{cases} 8x - 2y = 6 \\ 4x - 3y = 1 \end{cases}$

14.  $\begin{cases} 5x + 6y = 1 \\ 2x + 3y = 1 \end{cases}$

Solve the system by elimination.

15.  $\begin{cases} x + 3y = 5 \\ 3x + 4y = 10 \end{cases}$
16.  $\begin{cases} 3x + y = 4 \\ x - 2y = 4 \end{cases}$
17.  $\begin{cases} x + y = 5 \\ 3x + 3y = 12 \end{cases}$
18.  $\begin{cases} -2x + 5y = 7 \\ 3x + y = -2 \end{cases}$
19.  $\begin{cases} x - 2y = 5 \\ 3x - 6y = 15 \end{cases}$
20.  $\begin{cases} 5x - y = 7 \\ 6x + 4y = 2 \end{cases}$
21.  $\begin{cases} 3x + 6y = 1 \\ 2x + 4y = 5 \end{cases}$
22.  $\begin{cases} 3x - 5y = 3 \\ 4x - 7y = 1 \end{cases}$
23.  $\begin{cases} 2x + 3y = 5 \\ 7x - 12y = -3 \end{cases}$
24.  $\begin{cases} -4x + 3y = 5 \\ 8x - 6y = -10 \end{cases}$
25.  $\begin{cases} 3x + 4y = -8 \\ -6x - 7y = 14 \end{cases}$
26.  $\begin{cases} 5x + 6y = 1 \\ 3x + 4y = 1 \end{cases}$
27.  $\begin{cases} -2x + 7y = 15 \\ 3x + 3y = -1 \end{cases}$

Answers:

1.  $(2, 3)$
2.  $(1, -1)$
3.  $(2, 6)$
4. No solution.
5.  $(0, 0)$
6. No solution.
7.  $(1, 2)$
8. Infinitely many solutions.
9. No solution.
10.  $(\frac{3}{2}, -\frac{1}{2})$
11. Infinitely many solutions.
12.  $(2, -\frac{3}{2})$
13.  $(1, 1)$
14.  $(-1, 1)$
15.  $(2, 1)$
16.  $(\frac{12}{7}, -\frac{8}{7})$
17. No solution.
18.  $(-1, 1)$
19. Infinitely many solutions.
20.  $(\frac{15}{13}, -\frac{16}{13})$
21. No solution.
22.  $(16, 9)$
23.  $(\frac{17}{15}, \frac{41}{45})$
24. Infinitely many solutions.
25.  $(0, -2)$
26.  $(-1, 1)$
27.  $(-\frac{52}{27}, \frac{43}{27})$