



Solve the Systems by the Substitution Method

1. $x + y = -14$
 $x - y = 0$

7. $3x + y = 14$
 $3x + 3y = 120$

2. $x - 4y = 7$
 $x + 4y = 7$

8. $12x - 7y = 94$
 $12x - 3y = 102$

3. $-10x - 9y + 7 = -70$
 $3x + 15y - 10 = 50$

9. $-3x + 12y - 9 = 0$
 $12x - 30y = 0$

4. $12x + 14y = 24$
 $3x - y = 24$

10. $-3x - 7y = 21$
 $3x + 10y = -30$

5. $10x + 8y + 24 = 50$
 $5x + 7y + 15 = 34$

11. $25x + 15y - 10 = 0$
 $-15x - 15y + 48 = 0$

6. $2x + 3y = 5$
 $-2x + 9y = 7$

12. $-9x - 9y = -81$
 $5x + 4y = 20$

$$\begin{aligned} 13. \quad & 12x - 24y - 24 = 0 \\ & -18x + 12y - 12 = 0 \end{aligned}$$

$$\begin{aligned} 17. \quad & -15x + 10y + 25 = 0 \\ & 15x + 40y + 50 = 0 \end{aligned}$$

$$\begin{aligned} 14. \quad & 10x + 50y = 120 \\ & 40x + 10y = 100 \end{aligned}$$

$$\begin{aligned} 18. \quad & 7x - 15y = -80 \\ & 10x + 18y = 280 \end{aligned}$$

$$\begin{aligned} 15. \quad & x + y = 7 \\ & x - y = 7 \end{aligned}$$

$$\begin{aligned} 19. \quad & -7x + 4y = -70 \\ & 4x + 7y = 105 \end{aligned}$$

$$\begin{aligned} 16. \quad & 30x - 40y = 10 \\ & 30x - 120y = -390 \end{aligned}$$

$$\begin{aligned} 20. \quad & 5x - 7y + 8 = -30 \\ & 3x + 5y - 10 = 50 \end{aligned}$$

Solve by Elimination Method.

$$\begin{aligned} 21. \quad & 3x + 15 = 3y + 3 \\ & 2x + 7 = y + 13 \end{aligned}$$

$$\begin{aligned} 24. \quad & y + 7 = 2(x + 5) \\ & y + 1 = .5(x + 3) \end{aligned}$$

$$\begin{aligned} 22. \quad & -14y + 4 = -5x - 2y \\ & 9y - (x + 9) = 5 \end{aligned}$$

$$\begin{aligned} 25. \quad & 2x + 3y = 8 \\ & 3x + 2y = 12 \end{aligned}$$

$$\begin{aligned} 23. \quad & 8(x + y) + 24 = -32 \\ & 3 - (x + y) = 2 - 2x \end{aligned}$$

$$\begin{aligned} 26. \quad & x - 2y = y \\ & x + 2y = y \end{aligned}$$

27. $-3x + y = -7 + x$
 $-2x + y = -3(y)$

28. $8x - 4(y + 2) = 40$
 $4(x + 7) = 10y$

29. $3x + 2y = -15$
 $3x + 7y = 10$

30. $-12x + y = 10$
 $12x - 4y = 10$

31. $3x - 3y = 9$
 $4x + 2y = -9$

32. $x - y = 2$
 $x + 8 = 3y - 2$

33. $2x + 3 - y + 12 = 4(y)$
 $2x + 10 - y - 1 = 14$

34. $y + 1 - x - 5 = 4$
 $y - 1 + x + 5 = 4$

Answer Key

Solve the Systems by the Substitution Method

1. $x + y = -14$
 $x - y = 0$ **$(-7, -7)$**

7. $3x + y = 14$
 $3x + 3y = 120$ **$(-13, 53)$**

2. $x - 4y = 7$
 $x + 4y = 7$ **$(7, 0)$**

8. $12x - 7y = 94$
 $12x - 3y = 102$ **$(9, 2)$**

3. $-10x - 9y + 7 = -70$
 $3x + 15y - 10 = 50$ **$(5, 3)$**

9. $-3x + 12y - 9 = 0$
 $12x - 30y = 0$ **$(5, 2)$**

4. $12x + 14y = 24$
 $3x - y = 24$ **$(20/3, -4)$**

10. $-3x - 7y = 21$
 $3x + 10y = -30$ **$(0, -3)$**

5. $10x + 8y + 24 = 50$
 $5x + 7y + 15 = 34$ **$(1, 2)$**

11. $25x + 15y - 10 = 0$
 $-15x - 15y + 48 = 0$ **$(-19/5, 7)$**

6. $2x + 3y = 5$
 $-2x + 9y = 7$ **$(1, 1)$**

12. $-9x - 9y = -81$
 $5x + 4y = 20$ **$(-16, 25)$**

$$\begin{aligned} 13. \quad & 12x - 24y - 24 = 0 \\ & -18x + 12y - 12 = 0 \end{aligned} \quad (-2, -2)$$

$$\begin{aligned} 17. \quad & -15x + 10y + 25 = 0 \\ & 15x + 40y + 50 = 0 \end{aligned} \quad (2/3, -3/2)$$

$$\begin{aligned} 14. \quad & 10x + 50y = 120 \\ & 40x + 10y = 100 \end{aligned} \quad (2, 2)$$

$$\begin{aligned} 18. \quad & 7x - 15y = -80 \\ & 10x + 18y = 280 \end{aligned} \quad (10, 10)$$

$$\begin{aligned} 15. \quad & x + y = 7 \\ & x - y = 7 \end{aligned} \quad (7, 0)$$

$$\begin{aligned} 19. \quad & -7x + 4y = -70 \\ & 4x + 7y = 105 \end{aligned} \quad (14, 7)$$

$$\begin{aligned} 16. \quad & 30x - 40y = 10 \\ & 30x - 120y = -390 \end{aligned} \quad (7, 5)$$

$$\begin{aligned} 20. \quad & 5x - 7y + 8 = -30 \\ & 3x + 5y - 10 = 50 \end{aligned} \quad (5, 9)$$

Solve by Elimination Method.

$$\begin{aligned} 21. \quad & 3x + 15 = 3y + 3 \\ & 2x + 7 = y + 13 \end{aligned} \quad (10, 14)$$

$$\begin{aligned} 25. \quad & 2x + 3y = 8 \\ & 3x + 2y = 12 \end{aligned} \quad (4, 0)$$

$$\begin{aligned} 22. \quad & -14y + 4 = -5x - 2y \\ & 9y - (x + 9) = 5 \end{aligned} \quad (4, 2)$$

$$\begin{aligned} 26. \quad & x - 2y = y \\ & x + 2y = y \end{aligned} \quad (0, 0)$$

$$\begin{aligned} 23. \quad & 8(x + y) + 24 = -32 \\ & 3 - (x + y) = 2 - 2x \end{aligned} \quad (-4, -3)$$

$$\begin{aligned} 27. \quad & -3x + y = -7 + x \\ & -2x + y = -3(y) \end{aligned} \quad (2, 1)$$

$$\begin{aligned} 24. \quad & y + 7 = 2(x + 5) \\ & y + 1 = .5(x + 3) \end{aligned} \quad (-5/3, -1/3)$$

$$\begin{aligned} 28. \quad & 8x - 4(y + 2) = 40 \\ & 4(x + 7) = 10y \end{aligned} \quad (10, 8)$$

29.
$$\begin{aligned} 3x + 2y &= -15 \\ 3x + 7y &= 10 \end{aligned}$$
 $(-25/3, 5)$

32.
$$\begin{aligned} x - y &= 2 \\ x + 8 &= 3y - 2 \end{aligned}$$
 $(8, 6)$

30.
$$\begin{aligned} -12x + y &= 10 \\ 12x - 4y &= 10 \end{aligned}$$
 $(-25/18, -20/3)$

33.
$$\begin{aligned} 2x + 3 - y + 12 &= 4(y) \\ 2x + 10 - y - 1 &= 14 \end{aligned}$$
 $(5, 5)$

31.
$$\begin{aligned} 3x - 3y &= 9 \\ 4x + 2y &= -9 \end{aligned}$$
 $(-1/2, -7/2)$

34.
$$\begin{aligned} y + 1 - x - 5 &= 4 \\ y - 1 + x + 5 &= 4 \end{aligned}$$
 $(-4, 4)$