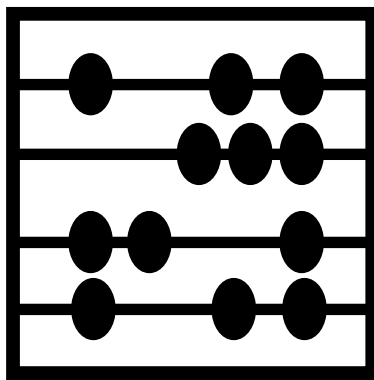

Solving Systems of Linear Equations by Substitution



Algebra 2

Practice Worksheet

Practice you can't find anywhere else

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Use the method of substitution to solve the system of equations.

Type 1: Both equations solved for same variable

1. $y = 5x + 3$
 $y = 4x + 1$

2. $y = -2x - 1$
 $y = -3x - 5$

3. $y = 3x - 4$
 $y = -6x + 5$

4. $y = -6x - 3$
 $y = -8x - 7$

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

6. $y = 2x - 4$
 $y = 3x - 9$

...

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

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

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

10. $x = -9y - 6$
 $x = -8y - 5$

11. $x = 3y - 7$
 $x = 2y - 4$

12. $x = -5y + 7$
 $x = 3y - 9$

Type 2: One equation solved for variable

13.
$$\begin{aligned} 3x + y &= 8 \\ y &= -2x + 6 \end{aligned}$$

14.
$$\begin{aligned} 2x + y &= -3 \\ y &= -5x + 6 \end{aligned}$$

15.
$$\begin{aligned} y &= 5x - 2 \\ -7x + y &= -6 \end{aligned}$$

16.
$$\begin{aligned} -2x + y &= -1 \\ y &= 3x - 5 \end{aligned}$$

...

17.
$$\begin{aligned} x + 4y &= 3 \\ x &= 6y - 7 \end{aligned}$$

18.
$$\begin{aligned} x - 4y &= 5 \\ x &= -2y - 7 \end{aligned}$$

19.
$$\begin{aligned} x - 6y &= -5 \\ x &= 2y + 3 \end{aligned}$$

20.
$$\begin{aligned} x - 3y &= -2 \\ x &= 4y - 5 \end{aligned}$$

...

21.
$$\begin{aligned} y &= -4x + 7 \\ -5x - y &= -11 \end{aligned}$$

22.
$$\begin{aligned} y &= -5x - 3 \\ 7x - y &= -9 \end{aligned}$$

23.
$$\begin{aligned} -2x - y &= -5 \\ y &= -3x + 10 \end{aligned}$$

24.
$$\begin{aligned} 4x - y &= 5 \\ y &= 3x - 2 \end{aligned}$$



...

25.
$$\begin{aligned} -x + 3y &= 7 \\ x &= 2y - 5 \end{aligned}$$

26.
$$\begin{aligned} x &= -4y - 2 \\ -x - 7y &= 8 \end{aligned}$$

27.
$$\begin{aligned} -x - 2y &= -5 \\ x &= -6y - 3 \end{aligned}$$

28.
$$\begin{aligned} x &= 2y + 5 \\ -x + 3y &= -9 \end{aligned}$$

...

29.
$$\begin{aligned} 15x + 5y &= -10 \\ y &= 2x + 8 \end{aligned}$$

30.
$$\begin{aligned} 12x + 2y &= 8 \\ y &= -5x + 3 \end{aligned}$$

31.
$$\begin{aligned} y &= -5x - 6 \\ -12x + 3y &= 36 \end{aligned}$$

32.
$$\begin{aligned} y &= 2x + 7 \\ 16x - 8y &= -56 \end{aligned}$$

...

33.
$$\begin{aligned} 2x + 6y &= -10 \\ x &= 3y + 1 \end{aligned}$$

34.
$$\begin{aligned} -2x - 12y &= 8 \\ x &= -7y - 6 \end{aligned}$$

35.
$$\begin{aligned} 8x - 16y &= 40 \\ x &= 3y + 10 \end{aligned}$$

36.
$$\begin{aligned} x &= 3y + 9 \\ -6x + 24y &= -84 \end{aligned}$$

Type 3: No equation solved for variable

37.
$$\begin{aligned} 6x + y &= 8 \\ 3x + y &= 2 \end{aligned}$$

38.
$$\begin{aligned} 3x + y &= 4 \\ 2x + y &= 7 \end{aligned}$$

39.
$$\begin{aligned} -4x + y &= 10 \\ -3x + y &= 6 \end{aligned}$$

40.
$$\begin{aligned} -2x + y &= -6 \\ -12x + y &= 14 \end{aligned}$$

...

41.
$$\begin{aligned} x + 6y &= 9 \\ x + 4y &= 3 \end{aligned}$$

42.
$$\begin{aligned} x - 5y &= -10 \\ x - 4y &= -6 \end{aligned}$$

43.
$$\begin{aligned} x - 2y &= 9 \\ x - 8y &= -3 \end{aligned}$$

44.
$$\begin{aligned} x + 8y &= -2 \\ x + 13y &= -12 \end{aligned}$$

...

45.
$$\begin{aligned} 2x - y &= 6 \\ -7x + y &= 9 \end{aligned}$$

46.
$$\begin{aligned} 2x - y &= -6 \\ -4x + y &= 10 \end{aligned}$$

47.
$$\begin{aligned} x - 9y &= 60 \\ -x + 5y &= -36 \end{aligned}$$

48.
$$\begin{aligned} -x + 7y &= 26 \\ x + 9y &= 38 \end{aligned}$$



$$\begin{aligned} 49. \quad & x + 5y = 7 \\ & -x - 6y = -10 \end{aligned}$$

$$\begin{aligned} 50. \quad & -7x - y = 58 \\ & -8x + y = 47 \end{aligned}$$

$$\begin{aligned} 51. \quad & x - 5y = 7 \\ & -x + 4y = -3 \end{aligned}$$

$$\begin{aligned} 52. \quad & -x + 6y = 65 \\ & x - 13y = -156 \end{aligned}$$

...

$$\begin{aligned} 53. \quad & 6x - 18y = -72 \\ & 4x - 28y = -80 \end{aligned}$$

$$\begin{aligned} 54. \quad & 4x + 8y = 48 \\ & 2x - 10y = -32 \end{aligned}$$

$$\begin{aligned} 55. \quad & 10x + 5y = 60 \\ & -15x + 3y = -27 \end{aligned}$$

$$\begin{aligned} 56. \quad & 24x + 6y = 72 \\ & -18x + 3y = -24 \end{aligned}$$

$$\begin{aligned} 57. \quad & 5x - 15y = -80 \\ & 3x - 27y = -84 \end{aligned}$$

$$\begin{aligned} 58. \quad & 24x + 3y = -99 \\ & -12x + 2y = 18 \end{aligned}$$

$$\begin{aligned} 59. \quad & 4x + 24y = -88 \\ & 3x + 15y = -51 \end{aligned}$$

$$\begin{aligned} 60. \quad & 52x + 4y = -160 \\ & 56x + 7y = -140 \end{aligned}$$

Type 1: Both equations solved for same variable

1. $x = -2, y = -7$

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

3. $x = 1, y = -1$

4. $x = -2, y = 9$

5. $x = 3, y = 3$

6. $x = 5, y = 6$

7. $x = -3, y = -4$

8. $x = -5, y = 2$

9. $x = 9, y = -3$

10. $x = 3, y = -1$

11. $x = 2, y = 3$

12. $x = -3, y = 2$

Type 2: One equation solved for variable

13. $x = 2, y = 2$

14. $x = 3, y = -9$

15. $x = 2, y = 8$

16. $x = 4, y = 7$

17. $x = -1, y = 1$

18. $x = -3, y = -2$

19. $x = 7, y = 2$



20. $x = 7, y = 3$

21. $x = 4, y = -9$

22. $x = -1, y = 2$

23. $x = 5, y = -5$

24. $x = 3, y = 7$

25. $x = -1, y = 2$

26. $x = 6, y = -2$

27. $x = 9, y = -2$

28. $x = -3, y = -4$

29. $x = -2, y = 4$

30. $x = 1, y = -2$

31. $x = -2, y = 4$

32. $x = -5, y = -3$

33. $x = -2, y = -1$

34. $x = 8, y = -2$

35. $x = -5, y = -5$

36. $x = -6, y = -5$

Type 3: No equation solved for variable

37. $x = 2, y = -4$

38. $x = -3, y = 13$

39. $x = -4, y = -6$



40. $x = -2, y = -10$

41. $x = -9, y = 3$

42. $x = 10, y = 4$

43. $x = 13, y = 2$

44. $x = 14, y = -2$

45. $x = -3, y = -12$

46. $x = -2, y = 2$

47. $x = 6, y = -6$

48. $x = 2, y = 4$

49. $x = -8, y = 3$

50. $x = -7, y = -9$

51. $x = -13, y = -4$

52. $x = 13, y = 13$

53. $x = -6, y = 2$

54. $x = 4, y = 4$

55. $x = 3, y = 6$

56. $x = 2, y = 4$

57. $x = -10, y = 2$

58. $x = -3, y = -9$

59. $x = 8, y = -5$

60. $x = -4, y = 12$