



## Algebra &amp; Functions (Maths 201-016)

**Linear Equations**

Solve for x or explain why there is no solution.

1.  $x - 8 = 5$
2.  $4x = 32$
3.  $-4 = x + 11$
4.  $9 + 2x = 1$
5.  $3x - 7 = 28$
6.  $10 - x = 20$
7.  $-19 = 17 - 4x$
8.  $1 - x = 1$
9.  $\frac{3}{2}x = 9$
10.  $1 - \frac{x}{2} = -3$
11.  $14x + 28 = 0$
12.  $1 - 7x = 0$
13.  $7 + \frac{3x}{2} = 10$
14.  $x = x + 1$
15.  $x = 2x$
16.  $3(x + 1) = 2(x + 1) + 5$
17.  $4 + (1 - x)(-7) = 2(x + 1) - 5 + 5x$
18.  $8(1 - 2x) = 4(1 - 4x) + 5$
19.  $12x + 2 = 4 - 2(1 - 2x) + 8x$
20.  $3(7 + 5x) = 37 - [5(x + 2) - 11x]$
21.  $-9 + [7(3x + 1) - 11x] = -2(1 - 5x)$
22.  $6(4x + 8) = 12(x + 4)$
23.  $\frac{x}{2} + \frac{x}{3} = 5$
24.  $\frac{2x}{3} = \frac{x}{5}$
25.  $x + \frac{7}{6} = \frac{5}{9}x - \frac{11}{18}$
26.  $3x - 2 = -2(2x - 5) + 2$
27.  $-\frac{x}{8} + \frac{x}{2} + \frac{x}{4} = 1$
28.  $\frac{4}{5}x = 3(1 - \frac{5}{6}x)$
29.  $-\frac{1}{3}x = 3(1 - \frac{1}{9}x)$
30.  $\frac{22}{12}x - \frac{4}{3} = 2(\frac{5}{4}x - \frac{7}{3})$
31.  $\frac{x}{2} - \frac{x+1}{3} = \frac{x}{4}$
32.  $-\frac{x+2}{8} + \frac{x}{3} = \frac{-x-3}{6} + \frac{2-x}{4}$
33.  $6x + 8 = 4[3x - 2 - 2(x + 1)]$
34.  $\frac{x+2}{5} = \frac{x-6}{4}$
35.  $\frac{4}{3}(x - 3) = 5(\frac{1}{4}x + \frac{1}{3})$
36.  $2 - (x + 5) = 1 - 4x$
37.  $\frac{x}{2} = \frac{1}{3}(33 - \frac{9x}{2})$
38.  $\frac{2}{3}x + 2 = \frac{1}{2}(\frac{5}{3} - \frac{x}{2})$
39.  $\frac{1}{10}(35x + 100) - \frac{7}{2}(x - \frac{4}{7}) - 12 = 0$
40.  $3(7 - 2x + x^2) = 14 + 3x^2 - 8(x - 1)$
41.  $\frac{2}{3}x - \frac{1}{5} = \frac{1}{2}(\frac{5}{6} - \frac{3}{5}x)$

## Answers

1. 13
2. 8
3.  $-15$
4.  $-4$
5.  $\frac{35}{3}$
6.  $-10$
7. 9
8. 0
9. 6
10. 8
11.  $-2$
12.  $\frac{1}{7}$
13. 2
14. No solution.
15. 0
16. 4
17.  $x = \text{any real number}$
18. No solution.
19.  $x = \text{any real number}$
20.  $\frac{2}{3}$
21.  $x = \text{any real number}$
22. 0
23. 6
24. 0
25.  $-4$
26. 2
27.  $\frac{8}{5}$
28.  $\frac{10}{11}$
29. No solution.
30. 5
31.  $-4$
32.  $\frac{2}{5}$
33.  $-12$
34. 38
35. 68
36.  $\frac{4}{3}$
37.  $\frac{11}{2}$
38.  $-\frac{14}{11}$
39.  $x = \text{any real number}$
40.  $\frac{1}{2}$
41.  $\frac{37}{58}$