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. $x =$ any real number
18. No solution.
19. $x =$ any real number
20. $\frac{2}{3}$
21. $x =$ 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. $x =$ any real number
40. $\frac{1}{2}$
41. $\frac{37}{58}$