ILLAWARRA TUTORING

In this worksheet you will learn how to solve both linear and non-linear equations using clear, step-by-step methods. Read each question carefully and show all of your working.

Easy Questions

1. Solve the equation $2x + 3 = 11$.
2. Solve the equation $\frac{x}{3} = 4$.
3. Solve the equation $x + 5 = 12$.
4. Solve the equation $3x - 2 = x + 4$.
5. Solve the equation $4(x - 1) = 12$.

Intermediate Questions

11. Solve the equation $3(x + 2) = 2x + 11$.
12. Solve the equation $\frac{2x - 3}{4} = \frac{x + 1}{2}$.
13. Solve the equation $4(x - 3) + 5 = 2x + 1$.
14. Solve the equation $\frac{3}{x} + 2 = 5$.
15. Solve the equation $\sqrt{x + 6} = 4$.
16. Solve the equation $\sqrt[3]{x - 1} = 2$.
17. Solve the equation $2(x + 3) - 3(x - 2) = x + 9$.
18. Solve the equation $5x + 6 = 2 + 2x + 3x$.
19. Solve the equation $\frac{x + 1}{2} = \frac{x + 3}{3}$.
20. Solve the equation $\frac{x}{2} + \frac{x}{3} = 5$.
21. Solve the equation $\frac{1}{x} + \frac{1}{3} = \frac{5}{6}$.

22. Solve the equation $2(x-1) = x+2$.
23. Solve the equation $3(x+5) = 2(x+10) - x$.
24. Solve the equation $4 + 2(x-3) = x+1$.
25. Solve the equation $5 - (x-3) = 2x+1$.

Hard Questions

21. Solve the equation $3(x-2) + 4(2x+1) = 5x+8$.
22. Solve the equation $\dfrac{3x+2}{x-2} = 2 + \dfrac{4}{x-2}$.
23. Solve the equation $\dfrac{2(x+3)}{x+1} = 3 - \dfrac{1}{x+1}$.
24. Solve the equation $\dfrac{x-3}{4} + \dfrac{2x+1}{3} = \dfrac{5}{2}$.
25. Solve the equation $\dfrac{x-2a}{a+1} = \dfrac{3x+a}{2a-1}$ for x in terms of a, where $a \neq -1$ and $a \neq \frac{1}{2}$.
26. Solve the equation $4(x+5) = 2(2x+11) - 1$ and state if there is a solution.
27. Solve the equation $\dfrac{5}{x+1} = \dfrac{5}{x-1} + \dfrac{10}{(x+1)(x-1)}$.
28. Solve the equation $\dfrac{2}{x-1} - \dfrac{3}{x+2} = \dfrac{x+4}{x^2+x-2}$.
29. Solve the equation $2(x-1) = 3(x+2) - (2x-1)$.
30. A number multiplied by 3 and added to twice itself equals 40. Solve for the number.