ILLAWARRA TUTORING

In this worksheet you will learn to develop techniques to solve both linear and non-linear equations using clear, step-by-step methods. Work through the problems carefully and show all your workings.

Easy Questions

1. Solve for x in the equation $x + 3 = 7$.

2. Solve for x in the equation $2x = 10$.

3. Solve for x in the equation $\dfrac{x}{3} = 4$.

4. Solve for x in the equation $3x + 5 = 2x + 9$.

5. Solve for x in the equation $4(x - 2) = 8$.

Intermediate Questions

6. Solve for x in the equation $2(x + 3) - 4 = 10$.

7. Solve for x in the equation $\dfrac{x - 2}{4} = 3$.

8. Solve for x in the equation $3(x - 1) = 2x + 4$.

9. Solve for x in the equation $5x - 3 = 2x + 12$.

10. Solve for x in the equation $2(3x + 1) = x + 19$.

11. Solve for x in the equation $3(2x - 1) + 4 = 2x + 13$.

12. Solve for x in the equation $\dfrac{1}{2}(4x - 8) = x - 2$.

13. Solve for x in the equation $\dfrac{x + 2}{3} + \dfrac{x - 1}{2} = 5$.

14. Solve for x in the equation $2(x + 4) = 3x + 1$.

15. Solve for x in the equation $\sqrt{x + 5} = 3$.

16. Solve for x in the equation $x^2 = 16$.

17. Solve for x in the equation $\dfrac{1}{x + 1} = 3$.

18. Solve for x in the equation $\sqrt{2x - 6} = 2$.

19. Solve for x in the equation $\dfrac{x}{2} + \dfrac{x}{3} = 5$.

20. Solve for x in the equation $3\left(x - 2\right) + 2\left(2x + 1\right) = 4\left(x + 3\right)$.

Hard Questions

21. Solve for x in the equation $2\left(x + 3\right) - 3\left(2 - x\right) = 4$.

22. Solve for x in the equation $\dfrac{x + 2}{3} - \dfrac{x - 1}{2} = 1$.

23. Solve for x in the equation $4 - \dfrac{1}{x} = 2 + \dfrac{3}{x}$.

24. Solve for x in the equation $\sqrt{2x + 3} - 2 = x - 1$.

25. Solve for x in the equation $\dfrac{1}{x + 3} + \dfrac{1}{x - 1} = 1$.

26. Solve for x in the equation $\dfrac{x + 1}{x - 2} = 3$.

27. Solve for x in the equation $\dfrac{2x - 3}{x + 2} = 1$.

28. Solve for x in the equation $\dfrac{1}{x} + \dfrac{1}{x + 2} = \dfrac{3}{x(x + 2)}$.

29. Solve for x in the equation $\dfrac{2}{x} - \dfrac{3}{x + 1} = \dfrac{1}{x(x + 1)}$.

30. Solve for x in the equation $3x - 2\sqrt{x + 4} = 4$.