



In this worksheet, you will learn how to factorise quadratic equations to find their solutions efficiently. Work through each question carefully and check your factorisations by expanding your factors.

Easy Questions

1. Factorise $x^2 + 5x + 6 = 0$ and hence find the values of x .
2. Factorise $x^2 - x - 6 = 0$ and determine the solutions.
3. Factorise $2x^2 + 7x + 3 = 0$ and state all possible values of x .
4. Factorise $x^2 + 6x + 9 = 0$ and conclude the value(s) of x .
5. Factorise $x^2 - 9 = 0$ and list the solutions.

Intermediate Questions

6. Factorise $3x^2 + 11x + 6 = 0$ and hence find x .
7. Factorise $4x^2 + 12x + 9 = 0$ and deduce the solution for x .
8. Factorise $6x^2 - 13x + 6 = 0$ and determine all values of x .
9. Factorise $5x^2 + 3x - 2 = 0$ and state the solutions.
10. Factorise $2x^2 - 5x + 2 = 0$ and hence find x .
11. Factorise $6x^2 + x - 2 = 0$ and list the possible solutions for x .
12. Factorise $3x^2 - 14x - 5 = 0$ and determine the value(s) of x .
13. The substitution $u = x + 1$ transforms the quadratic $u^2 + 5u + 6 = 0$. Factorise in terms of u and then solve for x .
14. Factorise $7x^2 + 10x - 8 = 0$ and hence find the solutions.
15. Factorise $2x^2 + 3x - 5 = 0$ and determine the values of x .
16. Factorise $6x^2 + 7x - 3 = 0$ and state the solutions.
17. Factorise $4x^2 - 12x + 9 = 0$ and deduce the solution for x .
18. Factorise $9x^2 + 12x + 4 = 0$ and hence determine x .

19. Factorise $5x^2 - 20 = 0$ and list all possible solutions.
20. Factorise $8x^2 + 10x - 3 = 0$ and determine the values of x .

Hard Questions

21. Factorise $12x^2 + 11x - 5 = 0$ and hence find the solutions for x .
22. Factorise $10x^2 - 7x - 12 = 0$ and state all possible values of x .
23. Factorise $14x^2 + 5x - 1 = 0$ and determine the solutions.
24. Factorise $15x^2 + 2x - 8 = 0$ and hence find x .
25. Factorise $18x^2 - 27x + 10 = 0$ and list the solutions.
26. Factorise $20x^2 - 13x - 7 = 0$ and determine the possible values of x .
27. Factorise $21x^2 + 2x - 8 = 0$ and state the solution set.
28. Factorise $16x^2 - 8x - 3 = 0$ and hence find x .
29. Factorise $9x^2 - 30x + 25 = 0$ and determine the value(s) of x .
30. Factorise $12x^2 - 7x - 10 = 0$ and list all possible solutions.