GCSE ALGEBRA PRACTICE SET

1. Simplify: 3x + 5x - 2x
2. Expand: (x + 4)(x - 3)
3. Factorise: x^2 - 9
4. Solve for x: 2x + 5 = 15
5. Simplify the expression: (3x^2 - 2x + 4) - (x^2 + x - 1)
6. Expand and simplify: 2(3x - 4) + 4(x + 1)
7. Factorise completely: x^2 + 5x + 6
8. Solve the quadratic equation: x^2 - 5x + 6 = 0
9. Simplify: (2x^3)(3x^2)
10. Solve for y: 3y - 7 = 2y + 1
11. Expand: (2x - 3)^2
12. Factorise: 4x^2 - 9
13. Simplify the algebraic fraction: (x^2 - 4)/(x + 2)
14. Solve: 5(x - 2) = 3x + 4
15. Expand and simplify: (x + 3)(x - 2) + (x - 1)(2x + 3)
16. Factorise: x^3 - 27
17. Solve inequalities: 2x + 3 > 7
18. Simplify: (3x^2y)(2xy^3)
19. Expand: 3(x - 2)^2
20. Solve for x: x/2 + 5 = 9
21. Simplify: (4x^2 - 9)/(2x + 3)
22. Factorise: x^2 - 6x + 9
23. Find the value of k if (x - 3) is a factor of x^3 + kx^2 - 4x + 12
24. Solve simultaneous equations: x + y = 8, 2x - y = 3
25. Express the formula y = 3x + 4 in the form x = f(y)
26. Expand: (x + 2)(x^2 - 2x + 4)
27. Factorise: 6x^2 + 11x - 35
28. Simplify: (2x + 3)^2 - (x - 1)(x + 1)
29. Solve for x: x^2 - 4x + 3 = 0
30. Simplify the expression: 4(x - 1) - 3(2x + 5)
31. Expand and simplify: 3(x + 2) - 2(2x - 3)
32. Factorise the expression: x^3 - 8
33. Solve the equation: 4x - 5 = 3(x + 1)
34. Simplify: (x^2 - 9)/(x - 3)
35. Find the quadratic equation with roots 2 and -3
36. Solve the inequality: 3x - 7 <= 2x + 1
37. Expand and simplify: (x + 1)(x + 2) + (x - 2)(x + 3)
38. Factorise: 3x^2 - 12x
39. Solve for y: 2y + 3 = 5y - 6

40. Simplify: (2x + 1)^2 - (x - 1)^2
41. Factorise completely: x^3 + 3x^2 - 4x - 12
42. Solve the system: 3x + 2y = 7, x - y = 1
43. Expand: (2x + 3)(x - 4)
44. Simplify the algebraic fraction: (4x^2 - 1)/(2x - 1)
45. Solve for x: 2(x - 3) + 4 = 3x + 1
46. Factorise: x^4 - 16
47. Solve the quadratic: x^2 + 4x + 3 = 0
48. Simplify: (3x^2 - 2x) - (x^2 + 4x)
49. Expand and simplify: (x - 3)(x^2 + 3x + 9)
50. Factorise: 9x^2 - 25
51. Solve for x: 5x - 3 = 2x + 12
52. Simplify the expression: (x + 1)(x^2 - x + 1)
53. Solve for y in terms of x: 3x + 4y = 12
54. Expand: (3x - 2)(x + 5)
55. Factorise completely: x^3 - 3x^2 - 4x + 12
56. Solve inequality: 4x + 3 > 7x - 6
57. Simplify: (x^2 - 1)/(x + 1)
58. Expand: (x - 4)^2
59. Factorise: x^2 - 16x + 64
60. Solve for x: (3x/4) - 2 = 1
61. Simplify: 5(x - 3) - 2(x + 1)
62. Expand and simplify: 2(x + 3) + 4(2x - 1)
63. Factorise the quadratic: x^2 + 7x + 12
64. Solve for y: 2y + 5 = 3(y - 2)
65. Simplify the fraction: (2x^2 - 8)/(4x)
66. Expand and simplify: (x + 2)(x^2 - x + 1)
67. Solve: x^2 + 2x - 15 = 0
68. Simplify: (3x^2y^2)(2xy^3)
69. Factorise: x^4 - 1
70. Solve for x: 4(x + 3) = 2x + 18
71. Expand: (x - 3)(x + 4)
72. Simplify the algebraic fraction: (x^3 - 1)/(x - 1)
73. Solve inequality: 5x - 2 <= 3x + 6
74. Factorise: x^2 - x - 6
75. Simplify: (2x^2 + 3x) - (x^2 - x)
76. Solve quadratic: x^2 - x - 12 = 0
77. Expand and simplify: (2x - 1)(x + 3)
78. Factorise completely: x^3 - 1

79. Solve: 3(x - 2) + 4 = 2x + 7
80. Simplify: (x^2 + 5x + 6)/(x + 2)
81. Find the next term in the sequence: 2, 6, 12, 20, 30, ?
82. Express as a single fraction: 1/x + 2/(x + 1)
83. Simplify and expand: (x - 1)(x^2 + x + 1)
84. Factorise: 2x^2 - 18
85. Solve for x: 2x^2 - 3x - 5 = 0
86. Simplify: (3x + 2)(3x - 2)
87. Factorise: 4x^2 - 12x + 9
88. Solve inequality: x^2 - 5x + 6 > 0
89. Expand and simplify: (x + 4)^2 - (x - 3)^2
90. Factorise completely: x^3 + 8
91. Solve: x^2 - 2x - 35 = 0
92. Simplify: (2x^2 + 3x - 1) - (x^2 - 2x + 4)
93. Expand: (3x - 1)(x^2 + 2x + 4)
94. Factorise: x^2 - 9x + 20
95. Solve for y: 5y + 3 = 2y + 15
96. Simplify: (x + 3)^3
97. Solve for x: (x + 2)(x - 3) = 0
98. Factorise: 9x^2 - 24x + 16
99. Solve the inequality: -3x + 7 < 4x - 2
100. Simplify the expression: (x^3 - 27)/(x - 3)