

Foundation GCSE: Expanding Brackets

Name: _____

Class: _____

Instructions: Answer all questions. Questions are ordered from easiest (1) to hardest (20). Working out should be shown where appropriate.

1. Expand $2(x + 3)$.
2. Expand $3(y - 4)$.
3. Expand $x(x + 5)$.
4. Expand $4(2a + 3)$.
5. Expand $-2(x + 5)$.
6. Expand $-3(y - 2)$.
7. Expand $x(3x - 4)$.
8. Expand and simplify $3(x + 2) + 2(x + 4)$.
9. Expand and simplify $4(2x - 1) - 2(x + 3)$.
10. Expand $5x(3x^2 - 2x + 1)$.
11. Expand and simplify $x(x + 3) + 2x(x - 1)$.
12. Expand $(x + 2)(x + 3)$.
13. Expand $(x - 4)(x + 5)$.
14. Expand $(x - 3)(x - 6)$.
15. Expand $(2x + 1)(x + 4)$.
16. Expand $(3x - 2)(2x + 5)$.
17. Expand and simplify $(x + 4)^2$.
18. Expand and simplify $(2x - 3)^2$.
19. Expand $(x + 3)(x - 3)$.
20. Expand and simplify $(x + 2)(x - 3)(x + 1)$.

Answers & Worked Solutions

1. $2x + 6$
 $2 \times x + 2 \times 3.$
2. $3y - 12$
 $3 \times y - 3 \times 4.$
3. $x^2 + 5x$
 $x \times x + x \times 5.$
4. $8a + 12$
 $4 \times 2a + 4 \times 3.$
5. $-2x - 10$
 $-2 \times x + (-2) \times 5.$
6. $-3y + 6$
 $-3 \times y - 3 \times (-2).$
7. $3x^2 - 4x$
 $x \times 3x - x \times 4.$
8. $5x + 14$
 $3x + 6 + 2x + 8 = 5x + 14.$
9. $6x - 10$
 $8x - 4 - 2x - 6 = 6x - 10.$
10. $15x^3 - 10x^2 + 5x$
 $5x(3x^2) - 5x(2x) + 5x(1).$
11. $3x^2 + x$
 $x^2 + 3x + 2x^2 - 2x = 3x^2 + x.$
12. $x^2 + 5x + 6$
 $x^2 + 3x + 2x + 6.$
13. $x^2 + x - 20$
 $x^2 + 5x - 4x - 20.$
14. $x^2 - 9x + 18$
 $x^2 - 6x - 3x + 18.$
15. $2x^2 + 9x + 4$
 $2x^2 + 8x + x + 4.$
16. $6x^2 + 11x - 10$
 $6x^2 + 15x - 4x - 10.$
17. $x^2 + 8x + 16$
 $(x + 4)(x + 4) = x^2 + 4x + 4x + 16.$
18. $4x^2 - 12x + 9$
 $(2x - 3)(2x - 3) = 4x^2 - 6x - 6x + 9.$
19. $x^2 - 9$
Difference of two squares: $x^2 - 3x + 3x - 9.$
20. $x^3 - 4x - 6$
 $(x^2 - x - 6)(x + 1) = x^3 + x^2 - x^2 - x - 6x - 6 = x^3 - 7x - 6.$