

Expanding and simplifying

Starter

1. **(Review of last lesson)** Expand: (a) $7a(9a + b)$ (b) $-4x(8 - 7x)$
2. **(Review of previous material)**
Simplify: (a) $5x + 3 + 8x - 6$ (b) $3x - 7 - 9x + 11$
3. **(Review of previous material)** Expand and collect like terms $3(a + 4) + 8(a + 7)$

Notes

When there are two single brackets to be expanded, often a simplified expression can be found after **collecting like terms**.

Be careful of a negative sign outside a bracket as it changes the sign of the terms inside the bracket.

E.g. 1 Expand and simplify:

- (a) $6(3a + 8) + 3(a - 5)$ (b) $4(x - 7) - 7(2x - 9)$
(c) $9(4 - 5x) - (3x - 7)$ (d) $4x(2x + 11) + 3(5x - 9)$

Working: (a) $6(3a + 8) + 3(a - 5) = 18a + 48 + 3a - 15$
 $= 21a + 33$

E.g. 2 Simplify the following: (a) $x^2 + x^2$ (b) $3x^2 + 5x^2$ (c) $x^2 + x^3$

Working: (a) $x^2 + x^2 = 2x^2$

Video: [Expanding single brackets](#)

[Solutions to Starter and E.g.s](#)

Exercise

- 9-1 class textbook: p101 M4.4 Qu 7-31 odd
A*-G class textbook: p93 M4.4 Qu 7-31 odd
9-1 homework book: p35 M4.4 Qu 1-22
A*-G homework book: p27 M4.4 Qu 1-21

Summary

When there are two single brackets to be expanded, often a simplified expression can be found after **collecting like terms**.

Be careful of a negative sign outside a bracket as it changes the sign of the terms inside the bracket.