

## Expansion of Single Brackets

### Starter

1. (Review of Y7 material)

Simplify: (a)  $9 \times 6x$  (b)  $-8 \times 7y$   
(c)  $4a \times a$  (d)  $3c \times 5c$

2. (Review of Y7 material)

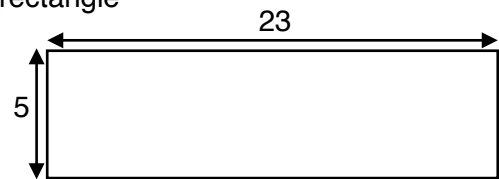
Simplify: (a)  $6x + 8x$  (b)  $5y - 9y$  (c)  $4p^2 + 6p$

### Notes

When we multiply two numbers it is like finding the area of a rectangle

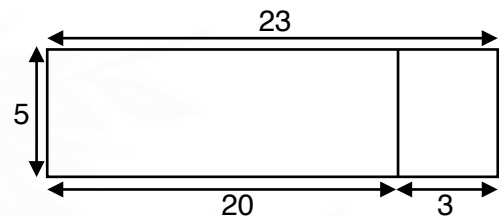
So  $5 \times 23$  can be represented by the diagram to the right.

The area of the rectangle is 115.



We could split 23 up into  $20 + 3$ .

$5 \times 23 = 5(20 + 3)$  and the diagram now has two rectangles. If we find the areas of the smaller rectangles and add them up, we will get the area of the larger rectangle.



$$5 \times 23 = 5(20 + 3) = 5 \times 20 + 5 \times 3$$

This illustrates that **terms outside brackets multiply each of the terms inside the bracket.**

**N.B.** Be careful of negative signs.

**E.g. 1** Expand the brackets: (a)  $3(5x + 1)$  (b)  $-4(6y - 1)$   
(c)  $8(4 - 3x)$  (d)  $5a(6a + 7)$  (e)  $-6y(8y - 5)$

**Working:** (a)  $3(5x + 1) = 3 \times 5x + 3 \times 1 = 15x + 3$

**N.B.** Be careful of a -ve sign in front of the second bracket

**E.g. 2** Expand and simplify: (a)  $4(x + 5) + 3(x + 2)$  (b)  $3(x + 4) - 2(3x + 1)$   
(c)  $6(3a - 7) + 5(9a - 4)$  (d)  $12(6x - 5) - 7(4x - 8)$

**Working:** (a)  $4(x + 5) + 3(x + 2) = 4x + 20 + 3x + 6 = 7x + 26$

**Video:** [Expanding single brackets](#)

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

### Exercise

p129 Ex 8.1 Qu 3, 4, 6, 7, 8, 9, 10 (expand single brackets)

**Summary**

Terms outside brackets multiply each of the terms inside the bracket.  
Be careful of negative signs.

[Textbook answers \(only available during a lockdown\)](#)

