Expanding and simplifying

Starter

1. **(Review of last lesson)** Expand: (a) $7a(9a+b)$ (b) $-4x(8-7x)$

Working: (a) $7a(9a+b) = 63a^2 + 7ab$

(b) $-4x(8-7x) = -32x + 28x^2$

2. **(Review of previous material)**
Simplify: (a) $5x+3+8x-6$ (b) $3x-7-9x+11$

Working: (a) $5x+3+8x-6 = 13x-3$

(b) $3x-7-9x+11 = -6x+4$

3. **(Review of previous material)** Expand and collect like terms $3(a+4)+8(a+7)$

Working: $3(a+4)+8(a+7) = 3a+12+8a+56$
$= 11a+68$

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

(b) $4(x-7)-7(2x-9) = 4x-28-14x+63$
$= 35-10x$

(c) $9(4-5x)-(3x-7) = 36-45x-3x+7$
$= 43-48x$

(d) $4x(2x+11)+3(5x-9) = 8x^2+44x+15x-27$
$= 8x^2+59x-27$

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

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

(b) $3x^2+5x^2 = 8x^2$

(c) x^2+x^3 cannot be simplified because the powers are different.

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