

## Expanding Brackets

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In algebra, expanding brackets means to remove them. Brackets can be removed through multiplication. If there is a factor next to the brackets, we treat whatever is inside the brackets as a “package” and multiply everything in it.

EXAMPLE: Expand  $4(x + 1)$

$$4(x + 1) = 4 \times (x + 1) = (4 \times x) + (4 \times 1) = 4x + 1$$

### RECALL: Distributive Law

$$a \times (b + c) = (a \times b) + (a \times c)$$
$$a(b+c) = ab + ac$$

**Instructions:** Expand the expressions below, simplifying where possible.

1	$5(a + 3)$	2	$3(c - 4)$
3	$6(3 - x)$	4	$3(u - 9)$



5	$7(2y + 3)$	6	$-8(t - 1)$
7	$12(5s + 4)$	8	$-11(9e - 2)$
9	$6(x + 2) + 1$	10	$4(q - 4) + q$
11	$12(4 - w) - 5$	12	$7(p + 4) + 6p$
13	$8(2d - 5) + 3d$	14	$9(4 - i) - 5i$



15	$5x(x + 3)$	16	$3k(3k - 7)$
17	$-4b(a - 3)$	18	$6r(2 - 3f)$
19	$4z(6h + 2)$	20	$7t(4w + 3)$
21	$5a(4f + 3o)$	22	$-3a(2 + 8f)$
23	$7a(a + 12b) - 10b$	24	$-8l(5 - 4l) + 8c$

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$$4(x + 1) = 4 \times (x + 1) = (4 \times x) + (4 \times 1) = 4x + 1$$

### RECALL: Distributive Law

$$a \times (b + c) = (a \times b) + (a \times c)$$

$$a(b+c) = ab + ac$$

**Instructions:** Expand the expressions below, simplifying where possible.

1	$12(x - 5)$	2	$9(6 - b)$
3	$7(g + 3) + 9$	4	$-12(3r + 2)$



5	$11(10h - 3)$	6	$6(6 - 7b)$
7	$-11(4q + 3j)$	8	$7f(f + 6) + 13$
9	$7r(4 - 3r + 5s)$	10	$9h(5h - 4e - 3)$
11	$7k(7k + 5e - 3)$	12	$6(v - 3) + 5(7 - v)$
13	$12x(3gh + 6x)$	14	$-9x(4x - 6yz)$



15	$2(a + 3) + 7(a + 9)$	16	$6(c + 3) + 4(c - 3)$
17	$7(w - 6) + 13(w - 1)$	18	$6(n + 3m) + 4(n - 3)$
19	$5(3x + 4) + 2(t - 12)$	20	$8(o - 7) - 4(3 - o)$
21	$3(7h + 2) + 2(4h + 5e)$	22	$9p(4p - 3g) + 5(5pg + 6)$
23	$7j(11j - 3) - 12(1 - 2j)$	24	$3t(4t - 6) + 7t(4f + 6t)$