

Expanding Single Brackets — Revision



Expanding single sets of Brackets

Worked Examples

$$1) 4(3x - 6) = 12x - 24$$

$$2) x(x + 4) = x^2 + 4x$$

TOP TIPS

- Multiply each term on the inside by the term on the outside
- Remember that a letter multiplied by itself will be that letter squared

$$1) 2(a + 4)$$

$$6) f(f - 5)$$

$$2) 3(b - 7)$$

$$7) 2g(g + 8)$$

$$3) 7(3c + 6)$$

$$8) 4h(3h - 7)$$

$$4) 9(5d - 4)$$

$$9) i(3i + y)$$

$$5) 6(4e - 8)$$

$$10) 3j(2x + 4j)$$

Expanding two sets of Brackets

Worked Example

$$4(3x + 10) - 5(2x - 3)$$

$$4(3x + 10) - 5(2x - 3)$$

$$= 12x + 40 - 10x + 15 = 2x + 55$$

TOP TIPS

- Expand each bracket separately
- Then simplify by collecting like terms
- Take care with a negative number before the second bracket. Multiply everything by a negative.

$$1) 3(4x - 5) + 4(6x - 3)$$

$$2) 7(3y + 2) - 3(3y + 2)$$

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Factorising Single Brackets — Revision



Factorising Single Brackets

Worked Examples

TOP TIPS

Factorise fully...

1) $12x + 18$ $6(2x + 3)$ = $12x + 18$

2) $3x^2 - 15x$ $3x(x + 5)$ = $3x^2 - 15x$

- Factorising is just the opposite of expanding brackets
- Look for the biggest factor from each term
- Build up your bracket and write it the other way round to see if it expands correctly
- You need to take as much outside the bracket as possible. This will be the greatest common factor and could be a number and a letter

1) $8x + 12$

6) $x^2 + 5x$

2) $5x + 20$

7) $x^2 + xy$

3) $14x - 8$

8) $10x^2 - 25x$

4) $12x - 28$

9) $27x + 18x^2$

5) $21 - 35x$

10) $14x^2y + 8xy^2$

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ANSWERS - Algebra

Expanding Single Brackets

- 1) $2(a + 4) = 2a + 8$ 6) $f(f - 5) = f^2 - 5f$
2) $3(b - 7) = 3b - 21$ 7) $2g(g + 8) = 2g^2 + 16g$
3) $7(3c + 6) = 21c + 42$ 8) $4h(3h - 7) = 12h^2 - 28h$
4) $9(5d - 4) = 45d - 36$ 9) $i(3i + y) = 3i^2 + iy$
5) $6(4e - 8) = 24e - 48$ 10) $3j(2x + 4j) = 6jx + 4j^2$

Expanding 2 Sets of Brackets

- 1) $3(4x - 5) + 4(6x - 3)$
 $12x - 15 + 24x - 12 = \underline{36x - 27}$
- 2) $7(3y + 2) - 3(3y + 2)$
 $21y + 14 - 9y - 6 = \underline{12y + 5}$

Factorising

- 1) $8x + 12 = 4(2x + 3)$ 6) $x^2 + 5x = x(x + 5)$
2) $5x + 20 = 5(x + 4)$ 7) $x^2 + xy = x(x + y)$
3) $14x - 8 = 2(x - 4)$ 8) $10x^2 - 25x = 5x(2x - 5)$
4) $12x - 28 = 4(3x - 7)$ 9) $27x + 18x^2 = 9x(3 + 2x)$
5) $21 - 35x = 7(3 - 5x)$ 10) $14x^2y + 8xy^2 = 2xy(7x + 4y)$

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