



Algebra – Expanding Brackets



To expand a bracket, multiply each term in the bracket by the expression outside the bracket.

Expand $3(y + 4)$
 $= 3y + 12$

Or you can use a table

	y	+4
3	3y	+12

So $3(y + 4) = 3y + 12$

To expand a triple bracket: first multiply two of the brackets then multiply each term of the result by each term of the remaining bracket.

Expand $(p + 5)(p - 7)(p - 4)$

First expand $(p + 5)(p - 7)$
 $= p^2 + 2p - 35$

Then multiply the result by the final bracket

So $(p + 5)(p - 7)(p - 4) = (p^2 + 2p - 35)(p - 4)$

$= p^3 - 4p^2 + 2p^2 - 8p - 35p + 140$
 $= p^3 - 2p^2 - 43p + 140$

Always write your answer in its simplest form by collecting like terms.

To expand a double bracket, multiply each term in the first bracket by each term in the second bracket.

Expand $(p + 5)(p - 7)$
 $= p^2 - 7p + 5p - 35$
 $= p^2 + 2p - 35$

Or you can use a table making sure you include the positives and negatives.

	p	-7
p	p^2	$-7p$
+5	$+5p$	-35

$= p^2 - 7p + 5p - 35$
 $= p^2 + 2p - 35$

To expand and simplify two brackets – multiply out the brackets and then simplify by collecting like terms being extremely careful with any negative signs.

Expand and simplify $3(2d + 5) - 5(3d - 4)$

Multiply out $= 6d + 15 - 15d + 20$

Simplify by collecting like terms $= -9d + 35$

Things to look out for....

$(y + 5)^2 = (y + 5)(y + 5)$

$(h - 3)^3 = (h - 3)(h - 3)(h - 3)$

So

$(2y - 3)(y + 5)^2 = (2y - 3)(y + 5)(y + 5)$