

Factorising Quadratics

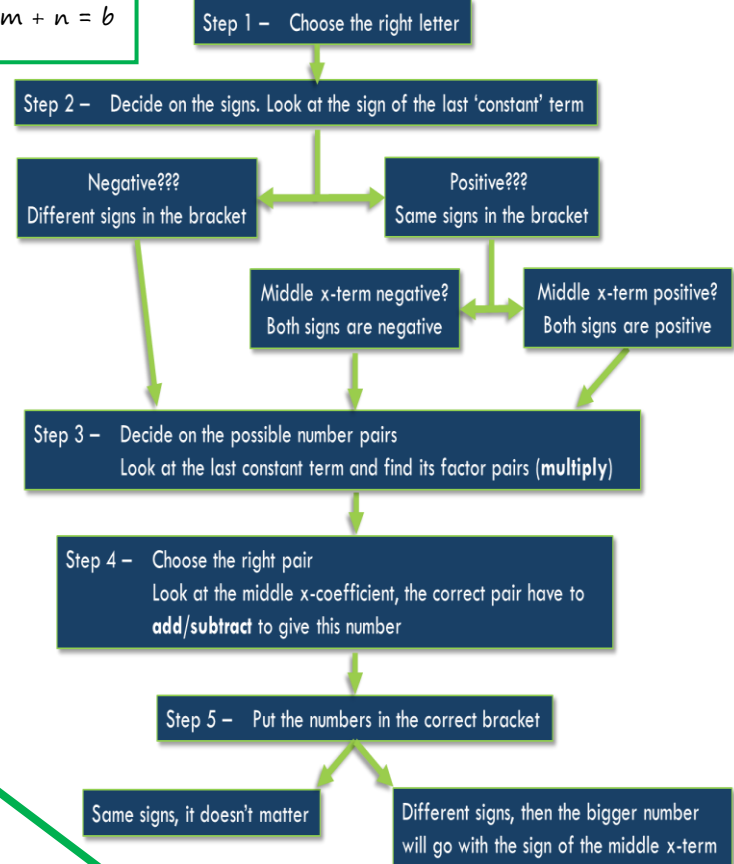
DoTS (diff. of 2 squares)
 $x^2 - a^2 = (x - a)(x + a)$

$49 - 16y^2$
 $= (7)^2 - (4y)^2$
 $= (7+4y)(7-4y)$

DoTS (diff. of 2 squares)
 $x^2 - a^2 = (x - a)(x + a)$

$x^2 - 25$
 $= (x)^2 - (5)^2$
 $= (x+5)(x-5)$

Trinomial
 $x^2 \pm bx \pm c = (x \pm m)(x \pm n)$
 where $m \times n = c$ & $m + n = b$



Common Factor
 Divide all terms by a common factor.

Just a number...
 $5x^2 + 20 = 5(x^2 + 4)$

Letters...
 $3ab^2 + 5a^2b = ab(3b + 5a)$

Letters & Numbers...
 $8x^3 + 20x^2 = 4x^2(2x + 5)$

DoTS (diff. of 2 squares)
 $x^2 - a^2 = (x - a)(x + a)$

Factorise Fully
 Two stage factorising.....
 CF followed by DoTS or Tris

Factorise Fully
 $8x^2 - 72$
 $= 2 [4x^2 - 36]$ CF
 $= 2 [(2x)^2 - (6)^2]$ DoTS
 $= 2 (2x+6)(2x-6)$

Factorise Fully
 $4x^2 - 20x - 96$
 $= 4 [x^2 - 5x - 24]$ CF
 $= 4 [(x + 3)(x - 8)]$ Tri
 $= 4 (x + 3)(x - 8)$

Harder Trinomial
 $ax^2 + bx + c = (ax \pm m)(x \pm n)$
 Use Cross Table or Wendy's Way
 $3x^2 + 2x - 8$

$3x^2 + 2x - 8$
 Cross table

$3x$	1	8	2	-4
$1x$	8	1	4	2

$= (3x-4)(x+2)$

$3x^2 + 2x - 8$
 Wendy's Way

$3 \times 8 = 24$
 $6 \times 4 = 24$
 $12 \times 2 = 24 \checkmark$

$3x^2 + 12x - 2x - 8$
 $3x(x+4) - 2(x+4)$
 $= (3x-4)(x+2)$

Trinomial
 $x^2 \pm bx \pm c = (x \pm m)(x \pm n)$
 where $m \times n = c$ & $m + n = b$

$x^2 + 5x + 6 = (x+2)(x+3)$
 $x^2 + x - 20 = (x+5)(x-4)$
 $x^2 - 7x + 6 = (x-1)(x-6)$