# Fill In The Blanks...

**Factorising Harder Quadratics** $(ax^2 + bx + c)$

| Quadratic | $a \times c$ | $\times$ to give $ac$ $+$ to give $b$ | Split the middle term | Group and Factorise | Factorised Quadratic |
|---|---|---|---|---|---|
| $2x^2 + 7x + 6$ | $12$ | $+4, +3$ | $2x^2 + 4x + 3x + 6$ | $2x(x + 2) + 3(x + 2)$ | $(2x + 3)(x + 2)$ |
| $3x^2 + 19x + 6$ | $18$ | $+18, +1$ | $3x^2 + 18x + x + 6$ | $3x(x + 6) + 1(x + 6)$ | $(3x + 1)(x + 6)$ |
| $8x^2 + 6x - 9$ | $-72$ | $+12, -6$ | $8x^2 + 12x - 6x - 9$ | $4x(2x + 3) - 3(2x + 3)$ | $(4x - 3)(2x + 3)$ |
| $5x^2 + 12x - 9$ | $-45$ | $+15, -3$ | $5x^2 + 15x - 3x - 9$ | $5x(x + 3) - 3(x + 3)$ | $(5x - 3)(x + 3)$ |
| $9x^2 - 9x - 10$ | $-90$ | $-15, +6$ | $9x^2 - 15x + 6x - 10$ | $3x(3x - 5) + 2(3x - 5)$ | $(3x + 2)(3x - 5)$ |
| $6x^2 + x - 5$ | $-30$ | $+6, -5$ | $6x^2 + 6x - 5x - 5$ | $6x(x + 1) - 5(x + 1)$ | $(6x - 5)(x + 1)$ |
| $8x^2 - 18x + 7$ | $+56$ | $-14, -4$ | $8x^2 - 14x - 4x + 7$ | $2x(4x - 7) - 1(4x - 7)$ | $(2x - 1)(4x - 7)$ |
| $4x^2 - 12x + 5$ | $+20$ | $-10, -2$ | $4x^2 - 10x - 2x + 5$ | $2x(2x - 5) - 1(2x - 5)$ | $(2x - 1)(2x - 5)$ |
| $6x^2 + 17x + 5$ | $+30$ | $+15, +2$ | $6x^2 + 15x + 2x + 5$ | $3x(2x + 5) + 1(2x + 5)$ | $(3x + 1)(2x + 5)$ |
| $12x^2 + 7x - 10$ | $-120$ | $-8, 15$ | $12x^2 - 8x + 15x - 10$ | $4x(3x - 2) + 5(3x - 2)$ | $(4x + 5)(3x - 2)$ |