

Factorising a three term quadratic expression with multiple x squared

1)

$$6x^2 + 19x + 10$$

$$\begin{array}{r} 6 \times 10 \\ = 60 \\ +1 \quad +60 \\ +2 \quad +30 \\ +3 \quad +20 \\ +4 \quad +5 \checkmark \end{array}$$

$$6x^2 + 4x + 15x + 10$$

$$2x(3x+2) + 5(3x+2)$$

$$(2x+5)(3x+2)$$

2)

$$6x^2 - 7x - 20$$

$$6x - 20$$

$$= -120$$

$$+1 - 120$$

$$+2 - 60$$

$$+3 - 40$$

$$+4 - 30$$

$$+5 - 24$$

$$+6 - 20$$

$$+8 - 15 \checkmark$$

$$6x^2 + 8x - 15x - 20$$

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

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