

Factoring - using Grouping

$$2x^2 + 3x + 1$$

$a \cdot c$
 a b
 2 3
 $1 \cdot 2$
 $(2x^2 + 2x) + (x + 1)$
 $(2x+1)(x+1)$

$$(21 - 7y) + (3x - xy)$$

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

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

$$10w^2 - 14wv - 15w + 21v$$

$$(10w^2 - 15w)(-14wv + 21v)$$

$$5w(2w - 3) - 7v(2w - 3)$$

$$(5w - 7v)(2w - 3)$$

$$(10w^2 - 14wv) - 15w + 21v$$

$$2w(5w - 7v) - 3(5w - 7v)$$

$$(2w - 3)(5w - 7v)$$

$$y^2 - 3y - 10 \quad +, -$$

$$\begin{array}{c}
 \begin{array}{|c|c|}
 \hline
 -10 & -3 \\
 \hline
 \end{array} \\
 \begin{array}{c}
 \swarrow \quad \searrow \\
 -5 \quad 2 \\
 \downarrow \quad \downarrow \\
 (y^2 - 5y) + (2y - 10) \\
 y(y-5) + 2(y-5) \\
 (y+2)(y-5)
 \end{array}
 \end{array}$$

$$2x^2 + 3x + 1$$

$$\begin{array}{c}
 \begin{array}{|c|c|}
 \hline
 2 & 3 \\
 \hline
 \end{array} \\
 \begin{array}{c}
 \swarrow \quad \searrow \\
 2 \quad 1 \\
 \downarrow \quad \downarrow \\
 (2x^2 + 2x) + (x + 1) \\
 2x(x+1) + 1(x+1) \\
 (2x+1)(x+1)
 \end{array}
 \end{array}$$

$$10w^2 - 14wv - 15w + 21v$$

$$(10w^2 - 15w)(-14wv + 21v)$$

$$5w(2w-3) - 7v(2w-3)$$

$$(5w-7v)(2w-3)$$

$$(10w^2 - 14wv - 15w + 21v)$$

$$2w(5w - 7v) - 3(5w - 7v)$$

$$(2w - 3)(5w - 7v)$$