

Algebra /

Factoring a quadratic with leading coefficient greater than 1

Worked Examples:

$$\begin{array}{l}
 4y^2 - 2y - 7 \\
 (4y - 9)(y + 7) \\
 (y - 1)(4y + 7)
 \end{array}$$

$$\begin{array}{r}
 4x-7 \\
 -63 \\
 -9 \\
 -2
 \end{array}$$

$$\begin{array}{r}
 63 \\
 3, 21 \\
 7, 9
 \end{array}$$

$$\begin{array}{l}
 3x^2 - 7x - 20 \\
 (3x + 5)(x - 4)
 \end{array}$$

$$\begin{array}{r}
 3x-10 \\
 -60 \\
 -12 \\
 -9
 \end{array}$$

$$\begin{array}{r}
 60 \\
 1, 60 \\
 2, 30 \\
 3, 20 \\
 4, 15 \\
 5, 12 \\
 6, 10
 \end{array}$$

$$\begin{array}{l}
 9x^2 - 2x - 7 \\
 (9x + 7)(x - 1)
 \end{array}$$

$$\begin{array}{r}
 9x-7 \\
 -63 \\
 +7 \\
 -2
 \end{array}$$

$$\begin{array}{r}
 63 \\
 1, 63 \\
 3, 21 \\
 7, 9
 \end{array}$$

$$\begin{array}{l}
 2x^2 - 9x - 18 \\
 (2x + 3)(x - 6)
 \end{array}$$

$$\begin{array}{r}
 2x-18 \\
 -36 \\
 +3 \\
 -9
 \end{array}$$

$$\begin{array}{l}
 15x^2 + 13x + 2 \\
 (5x + 1)(3x + 2)
 \end{array}$$

$$\begin{array}{r}
 15x+2 \\
 +30 \\
 +15
 \end{array}$$

$$\frac{8x^2 - 8x - 6}{2}$$

Always check for GCF!

$$\begin{array}{l}
 2(4x^2 - 4x - 3) \\
 2(4x + 2)(x - 3)
 \end{array}$$

$$\begin{array}{r}
 4x-3 \\
 -12 \\
 +2 \\
 -6
 \end{array}$$

$$2(2x + 1)(2x + 3)$$

$$\begin{array}{l}
 5x^2 + 19x - 4 \\
 (5x + 20)(x - 1)
 \end{array}$$

$$\begin{array}{r}
 5x-4 \\
 -20 \\
 +20 \\
 -1
 \end{array}$$

① GCF!

$$\begin{array}{c}
 \boxed{(x+4)(3x-1)} \\
 \hline
 \begin{array}{l}
 3x^2 + 11x - 14 \\
 (3x+14)(3x-3) \\
 \quad \quad \quad \textcircled{3} \\
 \boxed{(3x+14)(x-1)}
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 3x-14 \\
 -42 \\
 \hline
 +14 \quad -3 \\
 \hline
 11
 \end{array}$$

$$\begin{array}{r}
 42 \\
 1,42 \\
 2,81 \\
 \hline
 3,14 \\
 \hline
 4
 \end{array}$$

#ExponentsAndPolynomials
 #AlgebraAndGeometryReview

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