

5-1 Factoring Recap

When given in the form $ax^2 + bx + c$,
find the factors of $a \cdot c$ that add up to b .

$$\begin{array}{l}
 a \cdot c = -36 \qquad 6x^2 \overset{\text{thin line}}{\circlearrowleft} -5x -6 \\
 \text{Find factors of } \underline{-36} \text{ that add to} \\
 \text{give } \underline{-5} . \\
 \qquad \qquad \qquad \downarrow \\
 6x^2 \overset{\text{thick line}}{\circlearrowleft} -9x + 4x - 6 \\
 \text{Group the 1}^{\text{st}} \text{ 2 terms and the 2}^{\text{nd}} \text{ 2} \\
 \text{terms.} \\
 (6x^2 - 9x) + (4x - 6) \\
 \text{Factor out the GCF or each} \\
 \text{binomial.} \\
 3x(2x-3) + 2(2x-3) \\
 \text{Undistribute} \\
 (3x+2)(2x-3)
 \end{array}$$

Check in calculator

Now try $4x^2 + 4x - 15$

$$\begin{array}{l}
 a \cdot c = \qquad 12x^2 - 11x + 2 \\
 \text{Find factors of } \underline{\quad} \text{ that add to} \\
 \text{give } \underline{\quad} \\
 \text{Group the 1}^{\text{st}} \text{ 2 terms and the 2}^{\text{nd}} \text{ 2} \\
 \text{terms.} \\
 \text{Factor out the GCF or each} \\
 \text{binomial.} \\
 \text{Undistribute}
 \end{array}$$

y_1 = original problem, thin line

y_2 = your answer, thick line

5-1 Factoring Recap

When given in the form $ax^2 + bx + c$,
find the factors of $a \cdot c$ that add up to b .

$$\begin{array}{l}
 a \cdot c = -36 \qquad 6x^2 \overset{\text{thin line}}{\circlearrowleft} -5x -6 \\
 \text{Find factors of } \underline{-36} \text{ that add to} \\
 \text{give } \underline{-5} . \\
 \qquad \qquad \qquad \downarrow \\
 6x^2 \overset{\text{thick line}}{\circlearrowleft} -9x + 4x - 6 \\
 \text{Group the 1}^{\text{st}} \text{ 2 terms and the 2}^{\text{nd}} \text{ 2} \\
 \text{terms.} \\
 (6x^2 - 9x) + (4x - 6) \\
 \text{Factor out the GCF or each} \\
 \text{binomial.} \\
 3x(2x-3) + 2(2x-3) \\
 \text{Undistribute} \\
 (3x+2)(2x-3)
 \end{array}$$

Check in calculator

Now try $4x^2 + 4x - 15$

$$\begin{array}{l}
 a \cdot c = \qquad 12x^2 - 11x + 2 \\
 \text{Find factors of } \underline{\quad} \text{ that add to} \\
 \text{give } \underline{\quad} \\
 \text{Group the 1}^{\text{st}} \text{ 2 terms and the 2}^{\text{nd}} \text{ 2} \\
 \text{terms.} \\
 \text{Factor out the GCF or each} \\
 \text{binomial.} \\
 \text{Undistribute}
 \end{array}$$

y_1 = original problem, thin line

y_2 = your answer, thick line

