



Chapter 4 - Factoring Day 2 Wks


Example 1

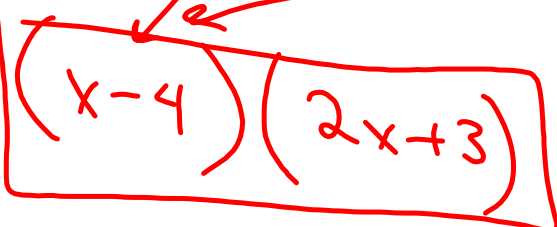
Factor by grouping

5. $2x^2 - 8x + 3x - 12$


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




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



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Example 1

Factor by grouping

6. $x^2 + 3x + 5x + 15$

$$\underline{x(x+3)} + \underline{5(x+3)}$$

$$\boxed{(x+3)(x+5)}$$

$$x^2 + 8x + 15$$
$$\begin{array}{c} \swarrow \quad \searrow \\ 3 \quad 5 \end{array}$$
$$(x+3)(x+5)$$

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Example 1

Factor by grouping

7. $10x^2 - 16x + 25x - 40$

$$2x(5x-8) + 5(5x-8)$$

$$(5x-8)(2x+5)$$

12. $8r^3 - 64r^2 + r - 8$

$$8r^2(r-8) + 1(r-8)$$

$$(r-8)(8r^2+1)$$

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Example 2

Factor completely

$$20. \quad 2x^2 + 9x + 10$$

$a=2 \quad c=10$

$$A \cdot C = 2 \cdot 10 = 20$$

$\begin{array}{c} \nearrow \\ 4 \quad 5 \\ \searrow \end{array}$

$$2x^2 + 4x + 5x + 10$$

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

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

$$ax^2 + bx + c$$

$$a \cdot c =$$

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

$$2x^2 + 5x + 4x + 10$$

$$2x^2 + 9x + 10$$

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Example 2

Factor completely

22. $5x^2 + 7x - 6$

$a=5 \quad c=-6$

$A \cdot C = -30$

$$\begin{array}{cc} 10 & -3 \\ 3 & -10 \end{array}$$

$$5x^2 + 10x - 3x - 6$$

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

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

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Example 2

Factor completely

24. $3x^2 - 14x - 24$

$$A \cdot C = 3 \cdot -24 = -72$$

$$\begin{array}{r} \wedge \\ 36 \quad -2 \\ 18 \quad -4 \\ \boxed{4 \quad -18} \end{array}$$

$$\begin{array}{l} 3x^2 + 4x - 18x - 24 \\ \underline{ + 4x - 18x - 24} \\ 3x^2 - 14x - 24 \\ x(3x+4) - 6(3x+4) \\ \boxed{(3x+4)(x-6)} \end{array}$$

30. $2x^2 - 11x + 14$

$$AC = 28$$

$$\begin{array}{r} \wedge \\ -4 \quad -7 \end{array}$$

$$2x^2 - 4x - 7x + 14$$

$$\begin{array}{l} 2x(x-2) - 7(x-2) \\ \boxed{(x-2)(2x-7)} \end{array}$$