

Factoring the "long way"

- Put the terms in descending order... ax^2+bx+c
- If possible, factor out a common term
- Multiply a & c
- Find the factors of this product
- Use these factors to rewrite the middle term
- Factor by grouping

example: Factor $-3x^2 + 7x - 2$

$$\begin{array}{r}
 \frac{6}{1, 6} \\
 \frac{2, 3}{} \\
 \hline
 -3x^2 + 6x + 1x - 2 \\
 \hline
 -3x(x-2) + 1(x-2) \\
 (-3x+1)(x-2)
 \end{array}$$

Sep 21-8:30 PM

Sep 21-8:35 PM

example: Factor $6x^2 + 7x - 3$

$$\begin{array}{r}
 \frac{18}{1, 18} \\
 \frac{2, 9}{3, 6} \\
 \hline
 6x^2 - 2x + 9x - 3 \\
 \hline
 2x(3x-1) + 3(3x-1) \\
 (2x+3)(3x-1)
 \end{array}$$

example: Factor $5x^2 - 32x - 21$

$$\begin{array}{r}
 \frac{105}{1, 105} \\
 \frac{3, 35}{5, 21} \\
 \hline
 5x^2 + 3x - 35x - 21 \\
 x(5x+3) - 7(5x-3) \\
 (x-7)(5x+3)
 \end{array}$$

Sep 21-8:36 PM

Sep 21-8:36 PM

example: Factor $7x^2 - 6x - 1 = 0$
Solve

$$\begin{array}{c} \wedge \\ 7x^2 - 7x + 1x - 1 \\ 7x(x-1) + 1(x-1) = 0 \\ (7x+1)(x-1) = 0 \\ x = -\frac{1}{7} \quad x = 1 \end{array}$$

$\frac{7}{117}$

HW
WS # 1 - 19 odd

Sep 21-8:36 PM

Sep 21-8:43 PM