

★ Factoring Trinomials

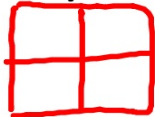
May 24

- Steps:
1. Factor out greatest common factor
 2. Use FOIL or another method to find the factors
 3. Check by multiplication

Examples: factor completely.

1. $x^2 + 12x + 27$

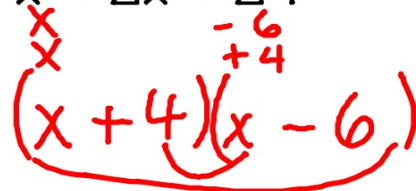
$(x+9)(x+3)$



$x \quad +9$
 $x \quad +3$

2. $x^2 - 2x - 24$

$(x+4)(x-6)$



$x \quad -6$
 $x \quad +4$

3. $4x^2 + 4x - 24$

$4(x^2 + x - 6)$
 $4(x+3)(x-2)$

4. $2x^3 - 16x^2 + 30x$

$2x(x^2 - 8x + 15)$
 $2x(x-5)(x-3)$

5. $2x^2 + 1x - 1$

$$(2x - 1)(x + 1)$$

Handwritten solution for problem 5 showing the factored form $(2x - 1)(x + 1)$. A red bracket underlines the terms $-1x$ and $+1$ in the second factor, with $-1x$ written below it. A larger red bracket underlines the entire second factor $(x + 1)$, with $2x$ written below it.

6. $7x^2 - 9x + 2$

$$(7x - 2)(x - 1)$$

Handwritten solution for problem 6 showing the factored form $(7x - 2)(x - 1)$. A red bracket underlines the terms $-2x$ and -1 in the second factor, with $-2x$ written below it. A larger red bracket underlines the entire second factor $(x - 1)$, with $-7x$ written below it.

7. $3x^2 - 7x - 6$

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

Handwritten solution for problem 7 showing the factored form $(3x + 2)(x - 3)$. A red bracket underlines the terms $+2x$ and -3 in the second factor, with $+2x$ written below it. A larger red bracket underlines the entire second factor $(x - 3)$, with $-9x$ written below it.

8. $16x^3 - 20x^2 + 6x$

$$2x(8x^2 - 10x + 3)$$
$$2x(4x - 3)(2x - 1)$$

Handwritten solution for problem 8 showing the factored form $2x(8x^2 - 10x + 3)$ and $2x(4x - 3)(2x - 1)$. A red bracket underlines the terms $-6x$ and $-4x$ in the second factor of the second expression, with $-6x$ and $-4x$ written below it. A larger red bracket underlines the entire second factor $(2x - 1)$, with $-4x$ written below it.