

## Factor Special Products

PF9

Reverse the process of the special products patterns.

You may need to factor out the GCF first.

### Difference of Two Squares Pattern:

$$a^2 - b^2 = (a + b)(a - b)$$

EX:  $4x^4 - 81x^2$

$$x^2(4x^2 - 81)$$

$$(2x^2 + 9)(2x^2 - 9)$$

$$x^2(2x + 9)(2x - 9)$$

EX:  $32x^2 - 8$

$$8(4x^2 - 1)$$

$$8(2x + 1)(2x - 1)$$

$$x = \pm \frac{1}{2}$$

### Perfect Square Trinomials:

$$a^2 + 2ab + b^2 = (a + b)^2$$

EX:  $4m^2 + 4mn + n^2$

$$(2m + n)^2 = (2m + n)(2m + n)$$

$$a^2 - 2ab + b^2 = (a - b)^2$$

EX:  $9x^2 - 12x + 4$

$$(3x - 2)^2 = (3x - 2)(3x - 2)$$

$$x = \frac{2}{3}$$

EX:  $-3y^2 + 36y - 108$

$$-3(y^2 - 12y + 36)$$

$$-3(y - 6)^2$$