

# Factoring Difference of Squares + Perfect Square Trinomials.

Review:

$$\textcircled{1} \quad (2x+5)(2x-5)$$

$$4x^2 - 10x + 10x - 25$$

$$4x^2 - 25$$

Difference of Squares

$$\textcircled{2} \quad (3x+4)(3x+4)$$

$$9x^2 + 12x + 12x + 16$$

$$9x^2 + 24x + 16$$

Perfect Square Trinomial

Factor  $\sqrt{49x^2} - \sqrt{16}$

$$(7x+4)(7x-4)$$

Try Factor  $\sqrt{36x^2} - \sqrt{49y^2}$

$$(6x-7y)(6x+7y)$$

$$9x^2 - 36y^2$$

$$\rightarrow (3x+6y)(3x-6y)$$

$$\frac{3}{9} (x+2y) \frac{3}{9} (x-2y)$$

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

★ First rule of factoring:  
Look for GCF

$$9x^2 - 36y^2$$

$$9(x^2 - 4y^2)$$

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

$$50x^2 - 72y^2$$

$$\frac{1}{2} (25x^2 - 36y^2)$$

$$\frac{1}{2} (5x+6y)(5x-6y)$$

$$x^4 - 81$$

$$\begin{array}{c} 12 \\ \wedge \\ 3 \times 4 \\ \wedge \\ 3 \times 2 \times 2 \end{array}$$

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

$$(x^2 + 9)(x + 3)(x - 3)$$

## Perfect Square Trinomials

$$(x+3)(x+3) = x^2 + 3x + 3x + 9$$

$$= x^2 + 6x + 9$$

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

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

$$ab \times 2 = 2ab$$

$$\sqrt{25x^2 + 40x + 16} = (5x + 4)^2$$

$20x \cdot 2 = 40x \checkmark$

Try Factor  $\sqrt{36x^2 - 60xy + 25y^2}$

$$= (6x - 5y)(6x - 5y)$$

$-30xy \cdot 2 = -60xy \checkmark$

Try  $48x^2 + 72x + 27$

$$3(16x^2 + 24x + 9)$$

$$3(4x + 3)(4x + 3)$$

$$12x \cdot 2 = 24x$$

Text Pg 247-50 # 2, 3, 5-9, 13, 14, 17  
Ho pg 377 # 5, 7 (odds)

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$$\sqrt{x^2} = x$$

$$\sqrt{4^2} = 4$$

$$\sqrt{(r+4)^2} = r+4$$

$$\begin{aligned} A_o - A_i &= A = \pi r^2 \\ \pi (r+4)^2 - \pi r^2 \\ \pi (\sqrt{(r+4)^2} - \sqrt{r^2}) \\ \pi (r+4 - r)(r+4 + r) \\ \pi (4)(2r+4) \\ \pi (4)(2)(r+2) \\ 8\pi (r+2) \\ 8\pi (6+2) \\ 64\pi \end{aligned}$$