6-4 Factoring for Alg 2 Honors!

Std. 4.0

(This is NOT in the book, so take notes!)

ex. 1 Factor completely: $x^{12n} - 729$

$$(x^{6n} - 27)(x^{6n} + 27)$$

$$(x^{2n} + 3)(x^{2n} - 3)(x^{4n} + 3x^{2n} + 9)(x^{4n} - 3x^{2n} + 9)$$

ex. 2 Factor by grouping: $49x^2 - 14x + 1 - 9n^2$

$$= (7x - 1)^2 - 9n^2 \qquad A^2 - B^2$$

$$= (7x - 1 - 3n)(7x - 1 + 3n)$$

Factoring by completing the square

ex. 3 $x^4 + 64 =$

$$(x^4 + 16x^2 + 64) - 16x^2$$

$$(x^2 + 8)^2 - 16x^2$$

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

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

ex. 4 $x^2 - 50x + 589$

$$(x^2 - 50x + 625) + 589 - 625$$

$$(x - 25)^2 - 36$$

$$(x - 25 + 6)(x - 25 - 6)$$

$$(x - 19)(x - 31)$$