9.7: Factor Special Products (REG)

Goals: *Factor difference of two squares

RECALL

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

Factor:

Ex: $y^2 - 16$

$(y + 4)(y - 4)$

Ex: $x^2 - 9$

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

Ex: $25m^2 - 16$

$(5m - 4)(5m + 4)$

Ex: $x^2 - 49y^2$

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

Ex: $8 - 18n^2$

$2(4 - 9n^2)$
$2(2 + 3n)(2 - 3n)$

Ex: $4y^2 - 64$

$4(y^2 - 16)$
$4(y + 4)(y - 4)$

Ex: $64c^2 - 16$

$16(c^2 - 1)$
$16(c - 1)(c + 1)$

Ex: $x^2 - 81y^2$

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

Ex: $12 - 48m^2$

$12(1 - 4m^2)$
$12(1 + 2m)(1 - 2m)$

Solve:

Ex: $w^2 - 16 = 0$

$(w + 4)(w - 4) = 0$
$w = 4, w = -4$

Ex: $n^2 - 81 = 0$

$(n - 9)(n + 9) = 0$
$n = 9, n = -9$

Ex: $x^2 = 49$

$x^2 - 49 = 0$
$(x + 7)(x - 7) = 0$
$x = 7, x = -7$