WARM-UP...

Factor each of the following...

a) $x^2 - 13x - 30$

M -30
A -13
N -15 2

$(x-15)(x+2)$

b) $4x^2 + 17x + 15$

M 60
A 17
N 5 12

$4x^2+12x+5x+15$
$4x(x+3)+5(x+3)$
$(x+3)(4x+5)$

c) $16x^2 - 24x + 9$

M 144
A -24
N -12 -12

$16x^2-12x-12x+9$
$4x(4x-3)-3(4x-3)$
$(4x-3)(4x-3)$
$(4x-3)^2$

IV. Difference of Squares:

Conjugate: Same binomials except opposite signs between the terms.

Multiply the conjugates shown below...

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

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

$x^2 - 9$

$(5w-4)(5w+4)$

$25w^2 + 20w - 20w - 16$

$25w^2 - 16$

$(4ab-c)(4ab+c)$

$16a^2b^2 + 4abc - 4abc - c^2$

$16a^2b^2 - c^2$

Is there a pattern when a binomial gets multiplied by it's conjugate?

I. Difference of Squares

Criteria...
- two terms that are perfect squares.
- must be a difference
- factor like this...

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

EXAMPLES...

1) $81x^2 - 16$

$(9x + 4)(9x - 4)$

2) $196x^2 - 49$

$(14x - 7)(14x + 7)$

3) $8x^2 - 18y^2$

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

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

4) $81z^4 - 625$

$(9z^2 + 25)(9z^2 - 25)$

$(9z^2 + 25)(3z + 5)(3z - 5)$

Let's make things slightly more complicated...

Factor each of the following:

$16-(a-b)^2$

$(4+(a-b))(4-(a-b))$

$(4+a-b)(4-a+b)$

$(a^2+12)^2-64a^2$

$((a+12)+8a)((a+12)-8a)$

$(a+12+8a)(a+12-8a)$

$(9a+12)(-7a+12)$

$3(3a+4)(-7a+12)$

HOMEWORK...

Puzzle Worksheet - Difference of Squares.pdf

Multiply

(I) $(a+5)(a-5) = a^2 - 25$

(D) $(2+3a)(2-3a) = 4 - 9a^2$

Factor:

(S) $x^2 - y^2 = (x+y)(x-y)$

(I) $4x^2 - 49y^2 = (2x+7y)(2x-7y)$

Attachments

Puzzle Worksheet - Difference of Squares.pdf