Quiz!

Expand and simplify each of the following.

a) (3x + 2)(x - 2)

$= 3x^2 - 6x + 2x - 4$

$= 3x^2 - 4x - 4$

b) (4 + 3x)(-3 + 2x)

$= -12 - x + 6x^2$

$= 6x^2 - x - 12$

c) -2(3x - 3)(2x + 4)

$= -2(6x^2 + 6x - 12)$

$= -12x^2 - 12x + 24$

4.2 Special Products

Investigation

WHAT IF.....

Special Binomials

Use any representation to investigate the following. Can you find any patterns?

NOTE!

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

$(x + 3)^2 = x^2 + 6x + 9$

$(3x + 1)^2 = 9x^2 + 6x + 1$

$(2x - 5)^2 = 4x^2 - 20x + 25$

$(4x + y)^2 = 16x^2 + 8xy + y^2$

Each is a...

Perfect Square Trinomial

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

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

Diff signs!

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

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

$= x^2 - 9$

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

$= x^2 - 16$

Do it again!

$(2y + 5)(2y - 5)$

$= 4y^2 - 25$

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

$= 9x^2 - 4b^2$

Each is a...

Difference of Squares!

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

Ex. 1 Expand and simplify each of the following.

a) $(x - 3)(x + 3) + (2x - 5)^2$

$= x^2 - 9 + 4x^2 - 20x + 25$

$= 5x^2 - 20x + 16$

b) $(3x + 7)^2 - (2x - 1)(2x + 1)$

$= 9x^2 + 42x + 49 - (4x^2 - 1)$

$= 9x^2 + 42x + 49 - 4x^2 + 1$

$= 5x^2 + 42x + 50$

FBUHL
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Basic: 3agh, 5cef

Regular: 4abd, 6adf, 11, 12, 16

Challenge: 19b