Factoring

There are 5 different kinds of Factoring:

- **Greatest common factor (GCF)**
- **Factor by grouping ("Pair them up")**
- **Simple Trinomials (Factor by Inspection)**
- **Hard Trinomials (Factor by Austrialian Method)**
- **Special Factors**
  - **Difference of Squares**
  - **Perfect Square Trinomials**

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II. Factoring Trinomials:

Type 1: Polynomials of the form $x^2 + bx + c$

- Often referred to as "Simple Trinomials"

Expand each of the following:

(a) $(w + 5)(w - 4) = w^2 - 4w + 5w - 20 = w^2 + w - 20$

(b) $(x - 8)(x - 6) = x^2 - 6x - 8x + 48 = x^2 - 14x + 48$

Expanding →

← Factoring

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General Form of a quadratic equation

$$ax^2 + bx + c = 0$$

Example: $2x^2 + 3x + 7 = 0$

$a = 2$
$b = 3$
$c = 7$

$x^2 + 8x + 7 = 0$

$a = 1$
$b = 8$
$c = 7$

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Simple Trinomials

- has three terms with the form...

$$ax^2 + bx + c$$

- a simple trinomial has an "a" value of 1.
- we use a method of inspection to factor them.

CHECK IT OUT!!!

INSPECTION METHOD

- here's how it goes... "What two numbers?"

[ ] Adds to get "b"

$ax^2 + bx + c$

Multiplies to get "c" [ ]

EXAMPLES...

1) $x^2 + 13x - 48$ SOLUTION

M -48 $1 \cdot 48$, $2 \cdot 24$, $3 \cdot 16$
A 13
N $16, -3$

$(x+16)(x-3)$

2) $x^2 - 10x - 24$ SOLUTION

M -24 1×24, 2×12
A -10
N $-12, +2$

$(x-12)(x+2)$

3) $2x^2 - 20x + 42$ SOLUTION

M 21 1×21, 3×7
A -10
N $-3, -7$

$2(x^2 - 10x + 21)$

$2(x-3)(x-7)$

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Let's try and factor each of the following trinomials:

$x^2+12x+32$

M 32 1 32
A 12 2 16
N 4, 8 4 8

$(x+4)(x+8)$

$a^2+10a-24$

M -24 1 24
A 10 -2 12
N -2, 12

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

$w^2-13w-30$

M -30
A -13
N 2, -15

$(w+2)(w-15)$

$x^2-8x+12$

M 12
A -8
N -2, -6

$(x-6)(x-2)$

Homework...

Worksheet on Simple Trinomials

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Attachments

Factoring trinomials a=1.pdf