

Factoring Trinomials when $a > 1$

<p>Lets think about FOIL</p> <p>1) $(2x+5)(3x+2)$</p> $6x^2 + 4x + 15x + 10$ $6x^2 + 19x + 10$	<p>2) $(3x+4)(x-6)$</p> $3x^2 - 18x + 4x - 24$ $3x^2 - 14x - 24$
<p>3) $(7x+3)(x+5)$</p> $7x^2 + 35x + 3x + 15$ $7x^2 + 38x + 15$	<p>4) $(2x+9)(3x-8)$</p> $6x^2 - 16x + 27x - 72$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin: 10px;"> Scenario 1: a is prime </div> $6x^2 + 11x - 72$
<p>Make sure the trinomial is in Standard Form</p>	
<p>$2x^2 + 23x + 30$</p> <p>$(2x + 3)(x + 10)$</p> <p>$(x) = 2x^2$ $(x) = 30$</p> <p style="margin-left: 100px;"> $\begin{matrix} 3x & 6, 5 \\ 20x & 10, 3 \\ & 15, 2 \end{matrix}$ </p>	<p>$3x^2 + 14x - 80$</p> <p>$(3x - 10)(x + 8)$</p> <p style="margin-left: 100px;"> $\begin{matrix} 2, 40 \\ 8, 10 \\ 20, 4 \\ 5, 16 \end{matrix}$ </p>
<p>$7x^2 - 38x + 40$</p> <p>$(7x - 10)(x - 4)$</p> <p style="margin-left: 100px;"> $\begin{matrix} 2, 20 & 10 \\ 4, 10 & 28 \\ 5, 8 & \end{matrix}$ </p>	<p>$3x^2 - x - 4$</p> <p>$(3x - 4)(x + 1)$</p> <p style="margin-left: 100px;"> $\begin{matrix} 1, 4 \\ 2, 2 & 4 \\ & 3 \end{matrix}$ </p>
<p>$5x^2 + 54x + 40$</p> <p>$(5x + 4)(x + 10)$</p> <p style="margin-left: 100px;"> $\begin{matrix} 5, 8 \\ 4, 10 \\ 2, 20 & 4 \\ & 50 \end{matrix}$ </p>	<p>$7x^2 - 46x - 21$</p> <p>$(7x + 3)(x - 7)$</p> <p style="margin-left: 100px;"> $\begin{matrix} 7, 3 \\ 21, 1 & 3 \\ & 40 \end{matrix}$ </p>

Scenario 2: a is not prime

$10x^2 + 49x + 18$ $(5x + 2)(2x + 9)$ $(10x \quad \quad \quad)(x \quad \quad \quad)$ 9,2 6,3 18,1	$6x^2 + 31x + 35$ $(3x + 5)(2x + 7)$ $(6x \quad \quad \quad)(x \quad \quad \quad)$ 7,5 35,1
$8x^2 + 30x + 27$ $(4x + 9)(2x + 3)$ $(8x \quad \quad \quad)(x \quad \quad \quad)$ 9,3 27,1	$9x^2 - 35x + 24$ $(3x - 8)(3x - 4)$ $(9x - 8)(x - 3)$ 4,4 8,3 2,12 24,1 8 27
$4x^2 - 21x - 18$ $(2x + 3)(2x - 6)$ $(4x + 3)(x - 6)$ 6,3 9,2 18,1 3 24	$4r^2 - 15r - 4$ $(2r + 1)(2r - 4)$ $(4r + 1)(r - 4)$ 2,2 4,1