

Using the “X” box method for factoring polynomials.

Basic set up: Put the polynomial into standard form: $ax^2 + bx + c$

	<table border="1" style="margin: auto;"> <tr> <td></td> <td style="text-align: center;">E</td> <td style="text-align: center;">F</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">Term 1 (cell E1)</td> <td style="text-align: center;">Left side plus an “x” (cell F1)</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">Right side plus an “x” (cell E2)</td> <td style="text-align: center;">Term 3 (cell F2)</td> </tr> </table>		E	F	1	Term 1 (cell E1)	Left side plus an “x” (cell F1)	2	Right side plus an “x” (cell E2)	Term 3 (cell F2)	<p>Solution:</p> <p>$(E + F)(1 + 2)$</p>
	E	F									
1	Term 1 (cell E1)	Left side plus an “x” (cell F1)									
2	Right side plus an “x” (cell E2)	Term 3 (cell F2)									
<p>Left side (right side) = Top left side + right side = bottom</p>	<p>Cell E1 = cell E (cell 1) Cell E2 = cell E (cell 2)</p>	<p>Cell F1 = cell F (cell 1) Cell F2 = cell F (cell 2)</p>									

Example 1: Factor $x^2 + 2x - 15$

	<table border="1" style="margin: auto;"> <tr> <td></td> <td style="text-align: center;">x</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">x^2</td> <td style="text-align: center;">5x</td> </tr> <tr> <td style="text-align: center;">-3</td> <td style="text-align: center;">-3x</td> <td style="text-align: center;">-15</td> </tr> </table>		x	5	x	x^2	5x	-3	-3x	-15	<p>Solution:</p> <p>$(x + 5)(x - 3)$</p>
	x	5									
x	x^2	5x									
-3	-3x	-15									

Example 1: Factor $6x^2 - 8x - 8$

	<table border="1" style="margin: auto;"> <tr> <td></td> <td style="text-align: center;">2x</td> <td style="text-align: center;">-4</td> </tr> <tr> <td style="text-align: center;">3x</td> <td style="text-align: center;">$6x^2$</td> <td style="text-align: center;">-12x</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">4x</td> <td style="text-align: center;">-8</td> </tr> </table>		2x	-4	3x	$6x^2$	-12x	2	4x	-8	<p>Solution:</p> <p>$(2x - 4)(3x + 2)$</p>
	2x	-4									
3x	$6x^2$	-12x									
2	4x	-8									

Example 1: Factor $10x^2 - 29x + 10$

	<table border="1" style="margin: auto;"> <tr> <td></td> <td style="text-align: center;">2x</td> <td style="text-align: center;">-5</td> </tr> <tr> <td style="text-align: center;">5x</td> <td style="text-align: center;">$10x^2$</td> <td style="text-align: center;">-25x</td> </tr> <tr> <td style="text-align: center;">-2</td> <td style="text-align: center;">-4x</td> <td style="text-align: center;">10</td> </tr> </table>		2x	-5	5x	$10x^2$	-25x	-2	-4x	10	<p>Solution:</p> <p>$(2x - 5)(5x - 2)$</p>
	2x	-5									
5x	$10x^2$	-25x									
-2	-4x	10									