Warmup

What percentage of trinomials are factorable?

Yesterday we looked at how to factor trinomials of the form $ax^2 + bx + c$ *(with $a=1$)*. e.g: $x^2 + 7x + 12 = (x+3)(x+4)$.

How many trinomials are actually factorable over the integers?   Let's investigate, using Photomath.   We'll split up the work.

If a trinomial can be factored, circle it in the chart below.

	$c = 1$	$c = 2$	$c = 3$	$c = 4$	$c = 5$	$c = 6$	$c = 7$	$c = 8$	$c = 9$
$b = 1$	x^2+x+1	x^2+x+2	x^2+x+3	x^2+x+4	x^2+x+5	x^2+x+6	x^2+x+7	x^2+x+8	x^2+x+9
$b = 2$	x^2+2x+1	x^2+2x+2	x^2+2x+3	x^2+2x+4	x^2+2x+5	x^2+2x+6	x^2+2x+7	x^2+2x+8	x^2+2x+9
$b = 3$	x^2+3x+1	x^2+3x+2	x^2+3x+3	x^2+3x+4	x^2+3x+5	x^2+3x+6	x^2+3x+7	x^2+3x+8	x^2+3x+9
$b = 4$	x^2+4x+1	x^2+4x+2	x^2+4x+3	x^2+4x+4	x^2+4x+5	x^2+4x+6	x^2+4x+7	x^2+4x+8	x^2+4x+9
$b = 5$	x^2+5x+1	x^2+5x+2	x^2+5x+3	x^2+5x+4	x^2+5x+5	x^2+5x+6	x^2+5x+7	x^2+5x+8	x^2+5x+9
$b = 6$	x^2+6x+1	x^2+6x+2	x^2+6x+3	x^2+6x+4	x^2+6x+5	x^2+6x+6	x^2+6x+7	x^2+6x+8	x^2+6x+9
$b = 7$	x^2+7x+1	x^2+7x+2	x^2+7x+3	x^2+7x+4	x^2+7x+5	x^2+7x+6	x^2+7x+7	x^2+7x+8	x^2+7x+9
$b = 8$	x^2+8x+1	x^2+8x+2	x^2+8x+3	x^2+8x+4	x^2+8x+5	x^2+8x+6	x^2+8x+7	x^2+8x+8	x^2+8x+9
$b = 9$	x^2+9x+1	x^2+9x+2	x^2+9x+3	x^2+9x+4	x^2+9x+5	x^2+9x+6	x^2+9x+7	x^2+9x+8	x^2+9x+9