Factoring Investigation – Not to FOIL

You have learned how to multiply binomial factors and how to find the Greatest Common Factor in a polynomial. Now you are going to try be an experimental mathematician. You have forty minutes to try come up with a method of factoring trinomials, similar to the trinomials you created when you multiplied two binomials against each other.

1. Choose at least 5 examples of binomials (using a variable without coefficient and a constant) and multiply them to create a few trinomials. Use the simple form of $x^2 \pm$ "a number"$x \pm$ "another number. Do you see any pattern emerging? Compare the constants in your binomial factors with your coefficients and constants in your trinomials. Describe any relationship you see. (Level 1-2: recognize simple patterns)
2. Investigate and try to find a method to work backwards from your trinomial that results in the two factors. (Level 3-4: recognizes and suggests relationships)
3. Explain the process you used, whether it worked for one trinomial or multiple trinomials. If you found more than one way, describe it. (Level 5-6: describes relationships as general rules and draws conclusions consistent with findings)
4. Test it against other trinomials. Does it work in all cases? Describe the cases where it does work and the cases where it does not work. (Level 7-8: provides a justification or proof)

You will be assessed using Criterion B.

Level Possible	Descriptor	Level Achieved
0	The student does not reach a standard described by any of the descriptors given below.	
1-2	The student **applies, with some guidance**, mathematical problem-solving techniques to recognize **simple** patterns.	
3-4	The student **applies** mathematical problem-solving techniques to recognize patterns, and **suggests** relationships or general rules.	
5-6	The student **selects and applies** mathematical problem-solving techniques to recognize patterns, **describe** them as relationships or general rules, and **draws conclusions** consistent with findings.	
7-8	The student **selects and applies** mathematical problem-solving techniques to recognize patterns, **describes** them as relationships or general rules, **draws conclusions** consistent with findings, and **provides justifications or proofs**.	

I affirm I have neither received nor given unauthorized aid on this assessment.

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(Student Signature)   (Date)