

Name:

Sum and Difference of Cubes

Part I: From factored form to expanded form

The following factored forms are different from those we've already encountered. Multiply out the factored form to investigate whether the indicated multiplication of factors produces interesting results.

Highlight your most simplified response in the right column.

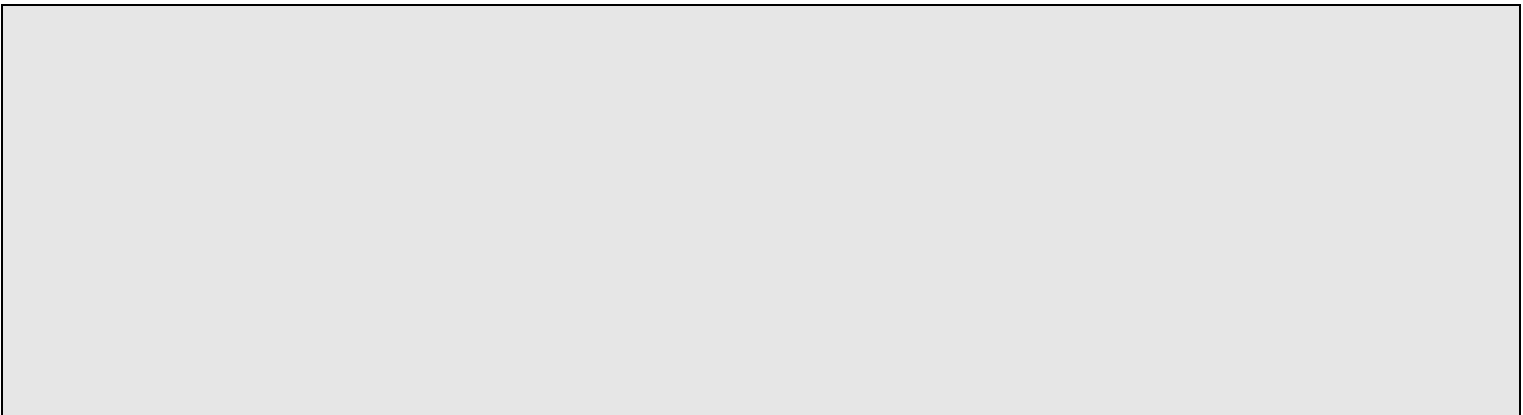
Factored form	Expanded form displayed by the calculator
1. $(x+2)(x^2 - 2x + 4)$	
2. $(x-3)(x^2 + 3x + 9)$	
3. $(x+7)(x^2 - 7x + 49)$	
4. $(x + \sqrt{11})(x^2 - \sqrt{11}x + 11)$	
5. $(x - \frac{2}{3})(x^2 + \frac{2}{3}x + \frac{4}{9})$	

Part II: Constructing and testing a general algebraic rule

IIa) Notice the simplified form of each expanded result in the right column of the table. Describe how this form is related to that of the corresponding factors.



IIb) State the regularity or patterns that you noticed (across the five examples) in terms of two general algebraic rules.



IIc) Create your own problem to show that the rules you found in question *b* above work.

