Polynomial Identities and Proofs

Essential Questions:

* How can polynomial identities be proven?
* What can polynomial identities apply to beyond just polynomials?

It's time to show off your creativity and marketing skills!

You are going to design an advertisement for a new polynomial identity that you are going to invent. Your goal for this activity is to demonstrate the proof of your polynomial identity through an algebraic proof and a numerical proof in an engaging way.

You may do this by making a flier, a newspaper or magazine advertisement, making an infomercial video or audio recording, or designing a visual presentation for investors through a flowchart or PowerPoint or even word document.

You must:

* Label and display your new polynomial identity
* Prove that it is true through an algebraic proof, identifying each step
* Demonstrate that your polynomial identity works on numerical relationships

Create your own using the columns below. See what happens when different binomials or trinomials are combined. Square one factor from column A and add it to one factor from column B to develop your own identity.

|  |  |
| --- | --- |
| Column A | Column B |
| (x − y) | (x2 + 2xy + y2) |
| (x + y) | (x2 − 2xy + y2) |
| (y + x) | (ax + b) |
| (y − x) | (cy + d) |