✔AlgebraBy Example

- Includes 40+ assignments that take 15-20 minutes to complete
- Was designed by teams of researchers and practitioners
- Can be used flexibly with a wide range of curricula
- Supports Common Core Practice and Content Standards
- Has demonstrated substantial impact in a randomized trial
- Has its largest impact for low achieving students

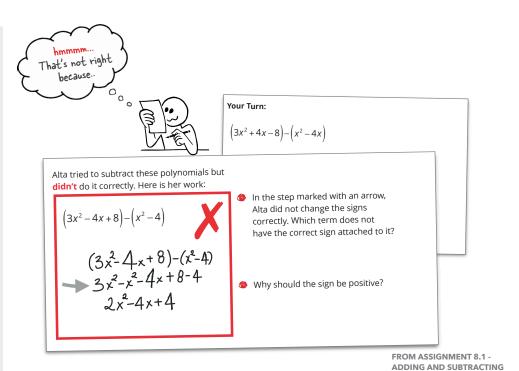|	Typical textbook	**Algebra ByExample**
Solving problems	✔	✔
Analyzing Math Problems*	✗	✔
Critiquing Math Solutions*	✗	✔
Articulating Math Arguments*	✗	✔

*critical behaviors highlighted in the CCSS-M Practice Standards

"AlgebraByExample puts into action the lessons learned from decades of laboratory research - students should work from an abundance of examples."

Ken Koedinger, Professor – Carnegie Mellon University

"My students like these assignments because understanding the mistakes is like solving a puzzle."

Laura Albright, Teacher – Arlington Public Schools (VA)

hmmmm... That's not right because..

Your Turn:

$$\left(3x^2 + 4x - 8\right) - \left(x^2 - 4x\right)$$

Alta tried to subtract these polynomials but **didn't** do it correctly. Here is her work:

$$\left(3x^2 - 4x + 8\right) - \left(x^2 - 4\right)$$

$(3x^2 - 4x + 8) - (x^2 - 4)$
$3x^2 - x^2 - 4x + 8 - 4$
$2x^2 - 4x + 4$

- In the step marked with an arrow, Alta did not change the signs correctly. Which term does not have the correct sign attached to it?

- Why should the sign be positive?

FROM ASSIGNMENT 8.1 - ADDING AND SUBTRACTING POLYNOMIALS

Example-based Problem Sets

Analyzing. Explaining. Solving.

What's different?

Typical Algebra assignments give students plenty of practice solving problems, but they usually don't include practice with mathematical argumentation.

AlgebraByExample gives students practice solving problems, and practice modeling, analyzing, critiquing, and articulating mathematical arguments.

AlgebraByExample assignments contain items that are displayed as pairs. The selection above shows an incorrect example for students to analyze and to respond to specific questions about the fictitious student's work. Then there is a similar problem for students to complete, by applying what they have just explained. Students also have the opportunity to analyze examples that are correct.

Over 40 Assignments Available for Free!

serpinstitute.org/algebra-by-example

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SERP
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