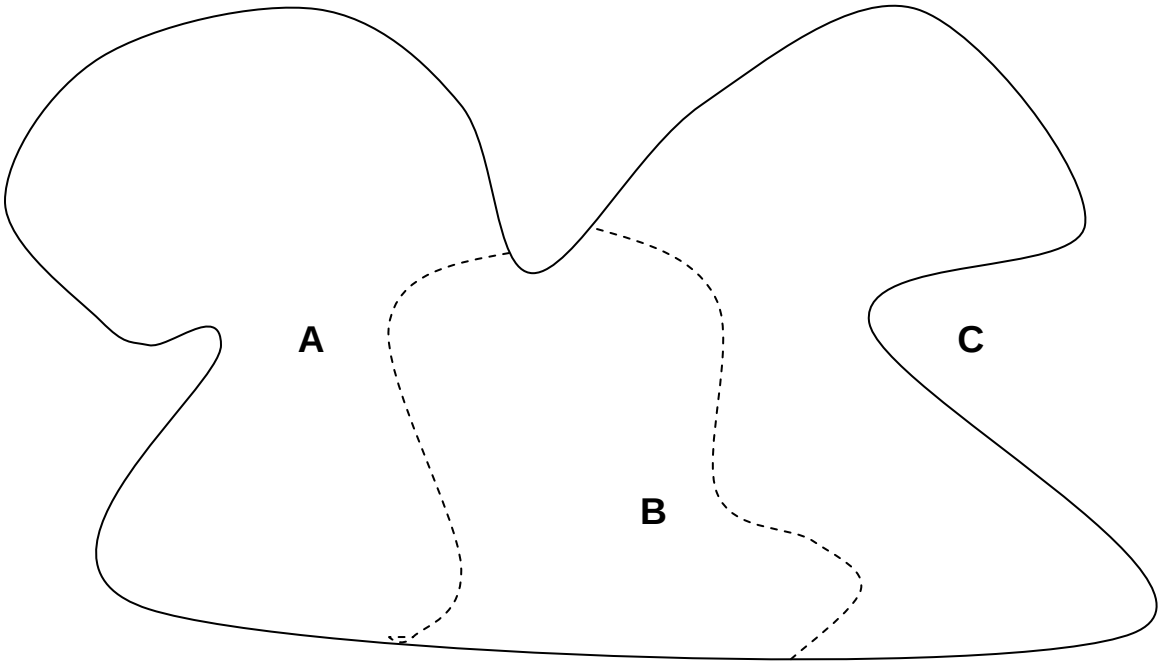
PROBLEM-OF-THE-DAY: ALGEBRA 1

WEEK: February 4 to February 8 **Day:** Friday

RISD Objective: Given a problem which calls for operations with polynomials, students will add, subtract, multiply, or factor the polynomial according to the context of the problem.

PROBLEM #100

The area of the figure below can be determined by adding the areas of its composite parts. In this case, the total area can be found by combining the areas of A, B, and C. The area of region A is represented by the polynomial expression, $4x^3 - 6x^2 + x - 4$. The area of region B is represented by the polynomial expression, $x^3 + 3x^2 - 5x - 3$. The area of region C is represented by the polynomial expression, $2x^3 + 7x - 1$. Write a simplified expression which represents the total area of the figure. Show your work.



MODEL SOLUTION #100

$$(4x^3 - 6x^2 + x - 4) + (x^3 + 3x^2 - 5x - 3) + (2x^3 + 7x - 1)$$
$$(4x^3 + x^3 + 2x^3) + (-6x^2 + 3x^2) + (x - 5x + 7x) + (-4 - 3 - 1)$$
$$7x^3 - 3x^2 + 3x - 8$$