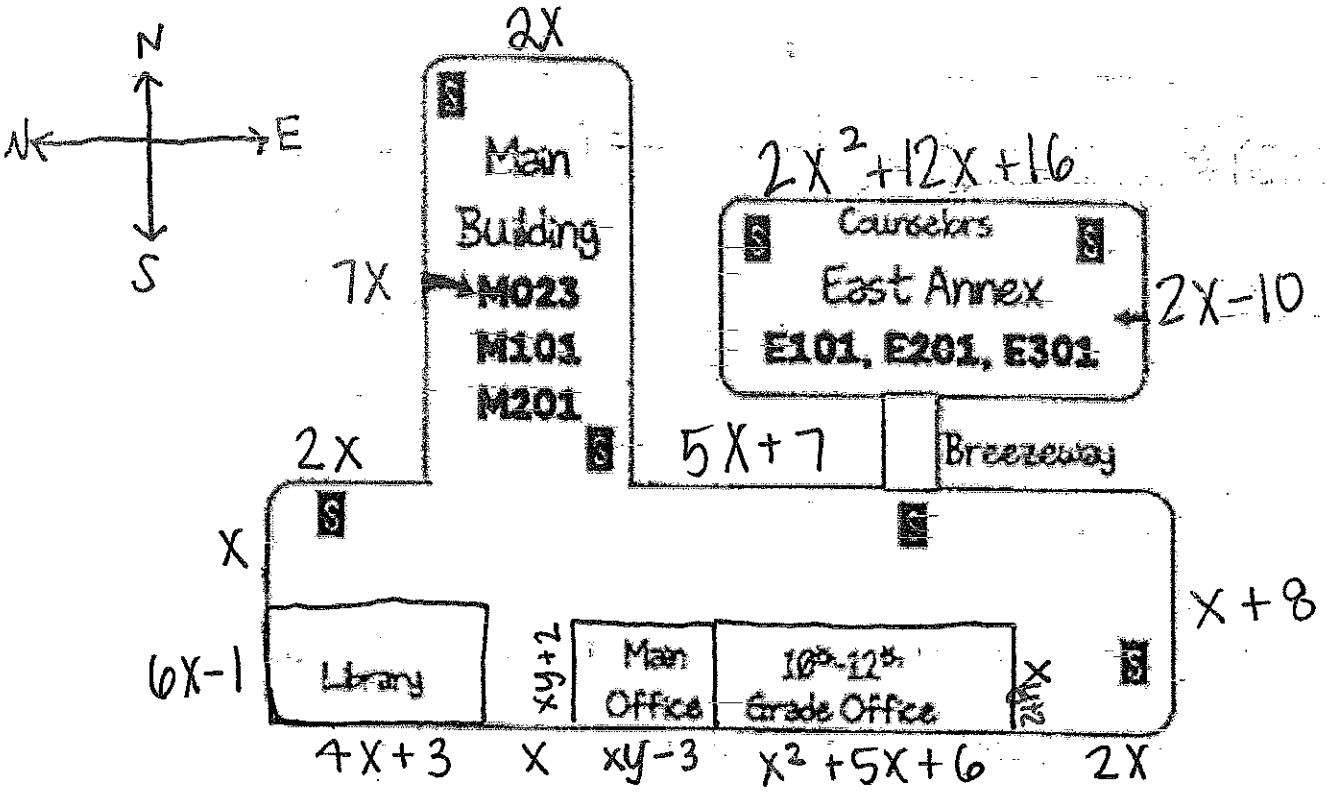
Quarter 1 Project- Operations and Expressions Name:_____

APR. A.1- Polynomials at White Station Date: _____ Block: _____

Directions: You are planning your route around school. You want to figure out the fastest way to get around the main building in order to get to your other classes on campus. The layout for the school (in feet) is shown below. Use the figure, and your knowledge of polynomials, perimeter, and area to solve the following:



1. Write a polynomial expression that represents the south side of the main building.

2. Simplify the polynomial expression that represents the south side of the main building.

3. Write a polynomial expression that represents the perimeter of the library.

4. Simplify the polynomial expression that represents the perimeter of the library. State one reason why the perimeter of any building would be useful to you when trying to get from class to class.

5. Write a polynomial expression that represents the area of the East Annex.

6. Simplify the polynomial expression that represents the area of the East Annex. State one reason why the area would be useful to you if you eventually have a class in the East Annex.

7. Write and simplify the polynomial expression that represents the area of the main office if $x = 2$ and $y = 5$. What unit would the area of the main office have?

8. You are interested in learning about the lengths and widths of the Freshman Academy, the Auditorium, and the Cafeteria as well because you visit those places daily. Find the dimensions of each place given the area:

    a. The area of the Freshman Academy is $5x^2 + 10x$

    b. The area of the Auditorium is $x^2 - 7x$

    c. The area of the Cafeteria is $9x^2 - 27x$

9. You realize that you have a class in the basement in the main building as well. You plan to use half the length and half the width of the East Annex to estimate the area of the classroom in the basement. Write a polynomial expression that represents the area of the class in the basement.

10. Simplify the polynomial expression that represents the area of the classroom in the basement.