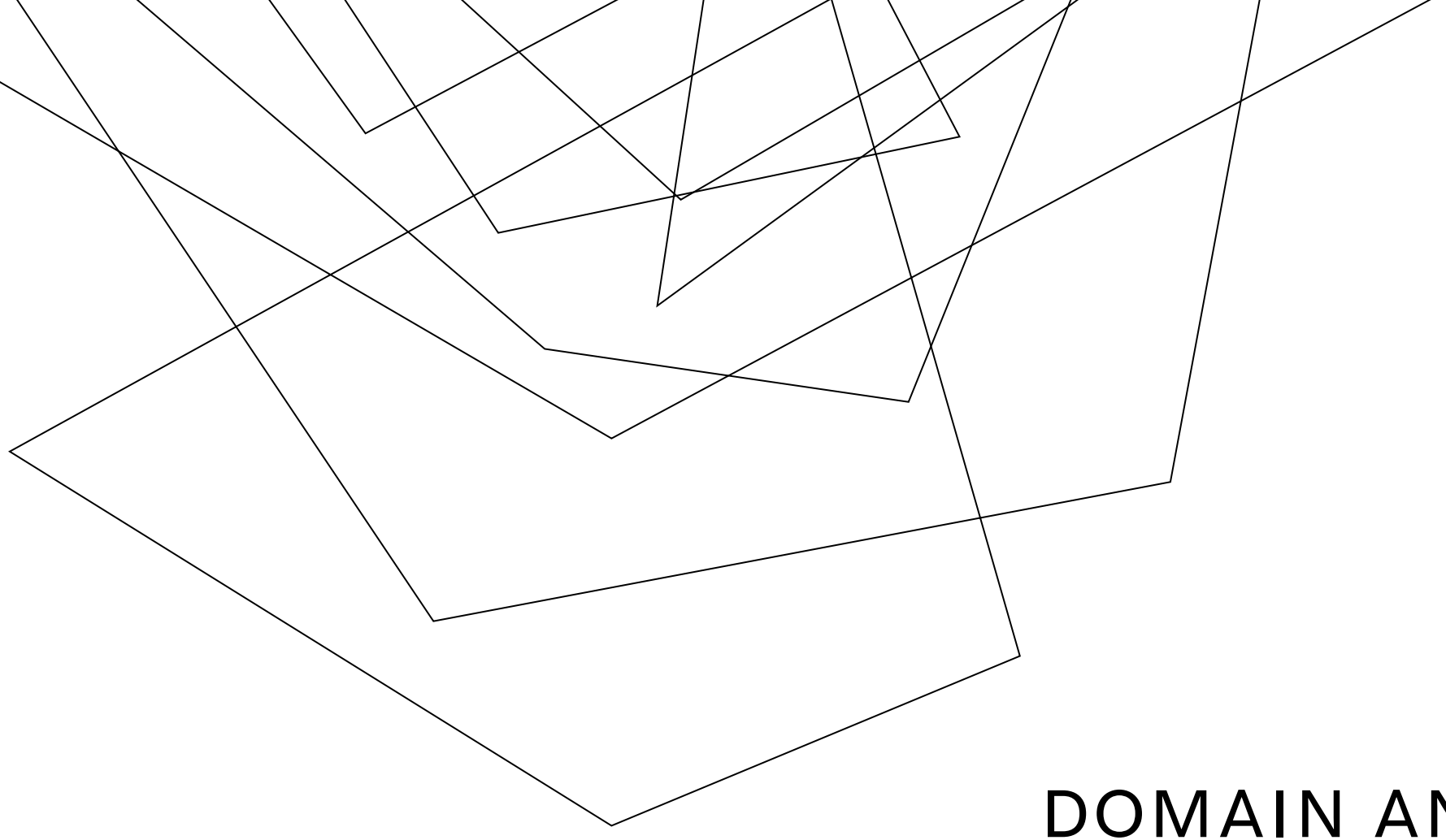


DOMAIN AND RANGE OF FUNCTIONS

GENMATH

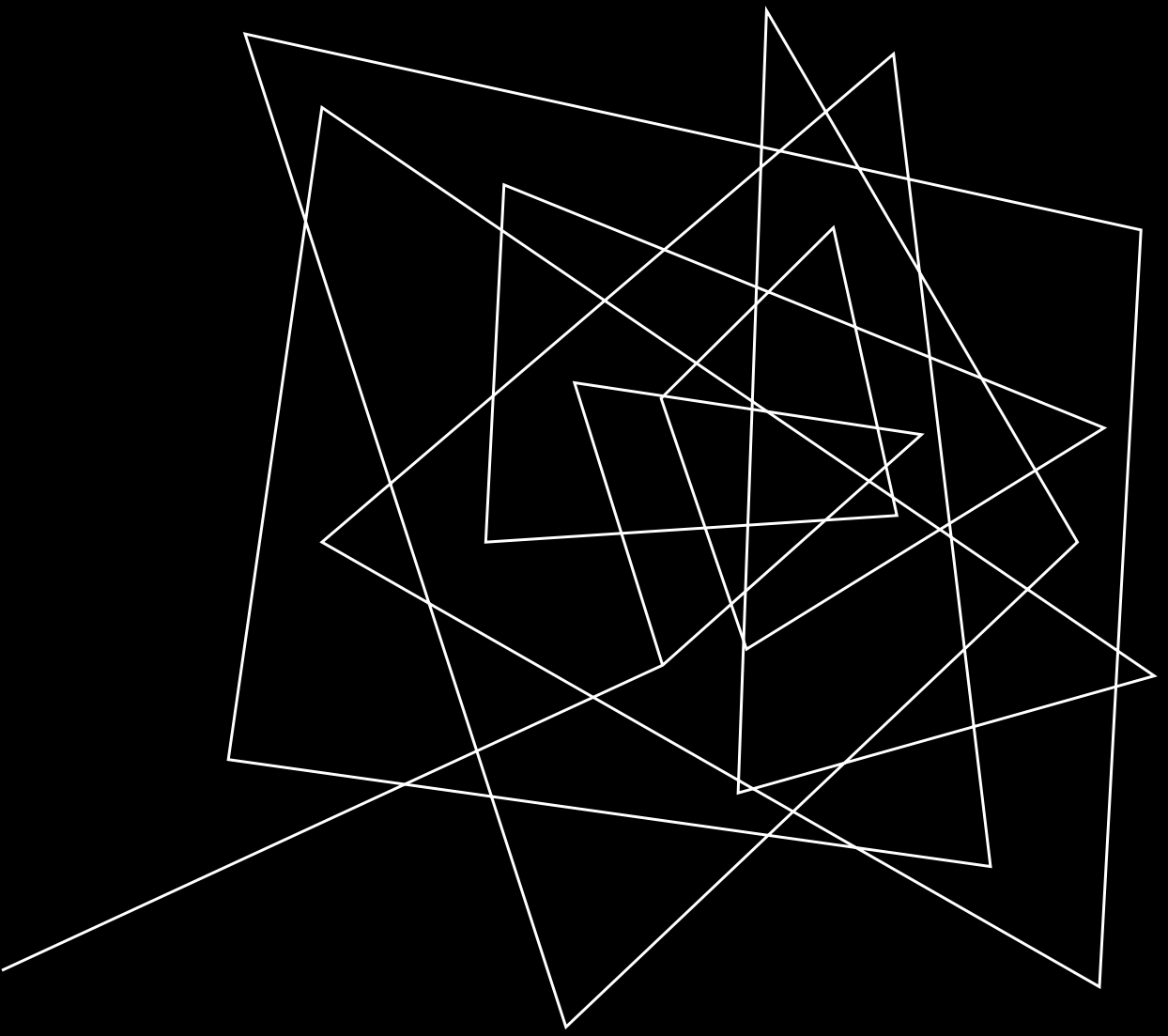
DOMAIN OF A FUNCTION

is the set of all values of the independent variable X that have corresponding values of the dependent variable Y.

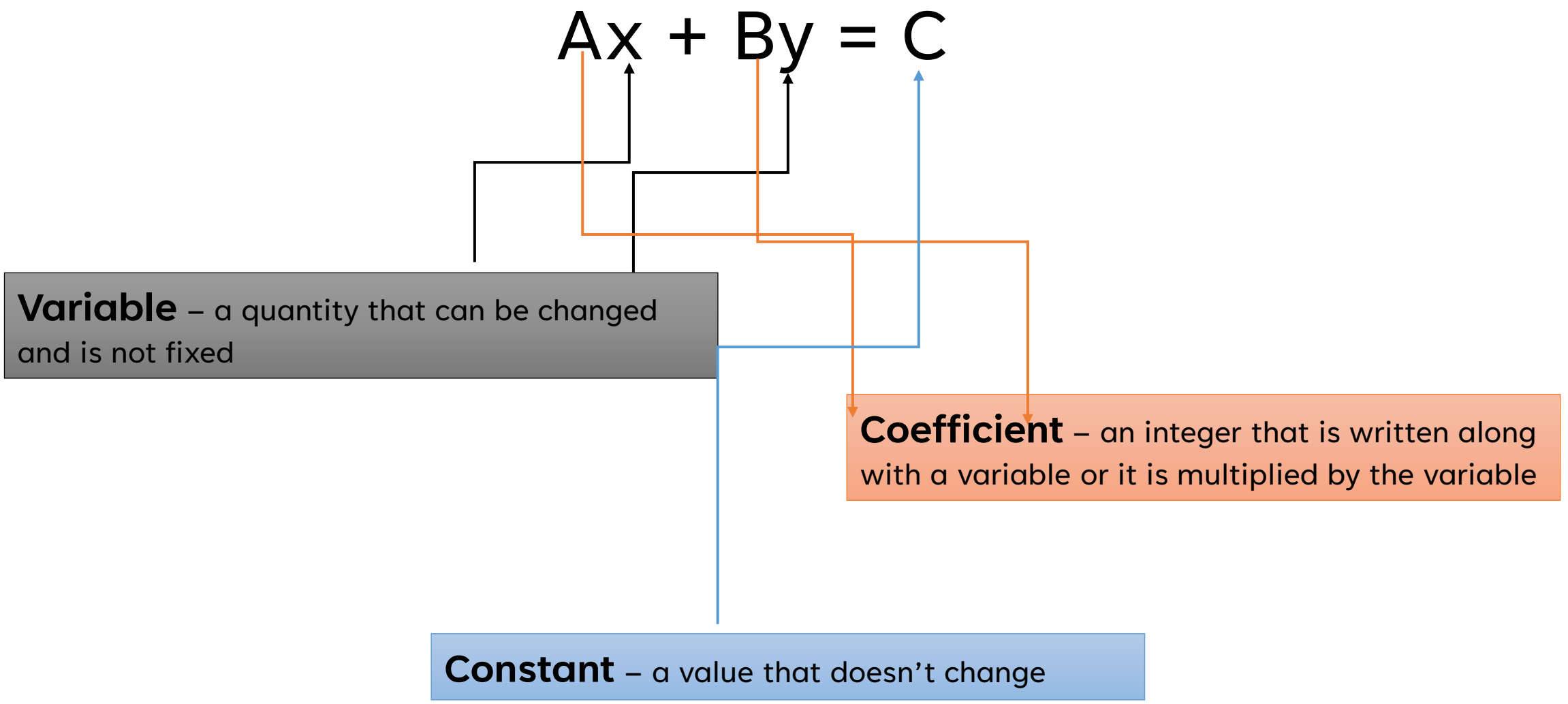
RANGE OF A FUNCTION

is the set of all values of Y that can be obtained from the possible values of X.

LINEAR FUNCTION



- is a function that has a degree of 1 and whose graph is a straight line. The *domain and range of a linear function* are both the set of real numbers
- Standard form of linear equation in two variables is of the form of Ax + By = C


Ax + By = C
Variable – a quantity that can be changed and is not fixed
Coefficient – an integer that is written along with a variable or it is multiplied by the variable
Constant – a value that doesn't change

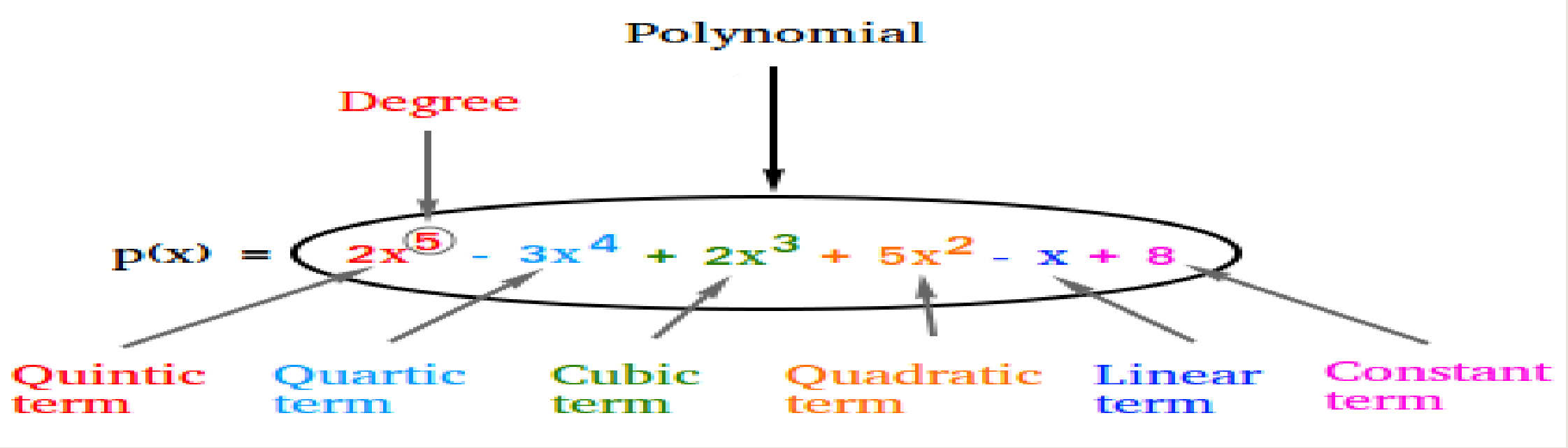
QUADRATIC FUNCTION

$$Ax^{2+}bx+c= 0$$

- is a function that has a degree of 2 and whose graph is a parabola. The *domain of a quadratic function is the* set of real numbers
- Equation of degree 2

POLYNOMIAL FUNCTION

- is a function involving nonnegative integer powers of the independent variable. The *domain of a polynomial function* is the set of real numbers; while, the *range of a polynomial function* whose degree is odd is the set of real numbers.



RATIONAL FUNCTION

is a function that can be expressed as a ratio of two polynomials. The *domain of a rational function* is the set of real numbers except the zeros of its denominator.

Examples

$$\frac{3x}{x^2+3} - \frac{2x}{x^2+1}$$

$$\frac{x}{x^2}$$

$$\frac{6}{x^2} + \frac{2}{x} + 6$$

RADICAL FUNCTION

is a function that contains radical expressions. The *domain of a radical function* is the set of real numbers except those that make the radicand of radicals with even index negative.

$$f(x) = 3\sqrt[3]{(x-1)}\ g(x) = 2\sqrt[4]{(x)}$$