

coefficient: a number that is being multiplied by a variable in an algebraic term

Example: In the term $-5x$, the coefficient is -5 .

constant term: a term that does not have a variable

Example: In the function $f(x) = 5x^3 + 7x - 5$, the constant term is -5 .

cubic function: a polynomial function of the third degree, whose greatest exponent is 3

Example: $f(x) = 5x^3 + x^2 - 4x + 1$ is a cubic function.

degree (of a polynomial): the highest exponent of any term in the polynomial, where the coefficient is not zero

Example: $3x^2 + 5x - 1$ has degree two and $a^3 - 2$ has degree three.

dependent variable: the value that results from the independent variable being manipulated

Example: On a graph, the dependent variable is always graphed on the y-axis.

domain: the set of all possible values for the independent variable in a relation

end behaviour: the description of the shape of the graph, from left to right, on the coordinate plane

extrapolation: the process used to estimate a value outside the domain of a set of data, based on a trend

function notation: a notation used to relate y and x in a function

Example: The function $y = 3x^3 - 5x^2$ can be written in function notation as $f(x) = 3x^3 - 5x^2$

independent variable: the variable that is being manipulated and evaluated with respect to how it affects something else

Example: On a graph, the independent variable is always graphed on the x -axis.

inflection point: a point on a curve at which the curvature changes from being positive to negative, or *vice versa*

interpolation: the process used to estimate a value within the domain of a set of data, based on a trend

leading coefficient: the coefficient of the term with the greatest degree in a polynomial function in standard form

Example: In the function $f(x) = 2x^3 + 7x$, the leading coefficient is 2.

linear function: a function of degree one

Example: $y = 3x - 5$ is a linear function.

line of best fit: a straight line that best approximates the trend in a scatter plot

maximum value (of a function): the greatest value in the range of a function

minimum value (of a function): the least value in the range of a function

polynomial function: a function that contains only the operations of multiplication and addition with real number coefficients, whole-number exponents, and two variables

Example: $y = 5x^3 + 6x^2 - 3x + 7$ is a polynomial function.

quadratic function: a function of degree two

Example: $3x^2 - 2x + 5$ is a quadratic function.

range: the set of all possible values for the dependent variable in a relation

real number: any positive or negative number

Example: All integers, rational numbers, and irrational numbers are real numbers.

regression function: a line or curve of best fit, developed through a statistical analysis of data

scatter plot: a set of points on a grid, used to visualize a relationship or possible trend of data

standard form: name given to a polynomial written with terms ordered by degree, from highest to lowest

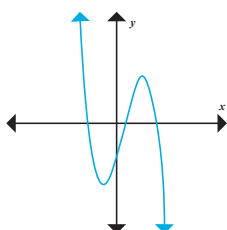
Example: The standard form for linear function is $f(x) = ax + b$, $a \neq 0$

The standard form for a quadratic function is $f(x) = ax^2 + bx + c$, $a \neq 0$

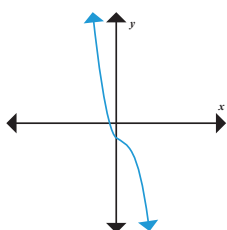
The standard form for a cubic function is $f(x) = ax^3 + bx^2 + cx + d$, $a \neq 0$

turning point: any point where the graph of a function changes from increasing to decreasing

Example: This graph has two turning points as shown by the y-values changing from decreasing to increasing to decreasing



Example: This curve does not have turning points as shown by the y-values always decreasing.



x -intercept: the x -coordinate of the point where a line or curve crosses the x -axis

Example: The value of x when $y = 0$ is the x -intercept.

y -intercept: the y -coordinate of the point where a line or curve crosses the y -axis

Example: The value of y when $x = 0$ is the y -intercept.