Unit 2 Glossary Terms

polynomial

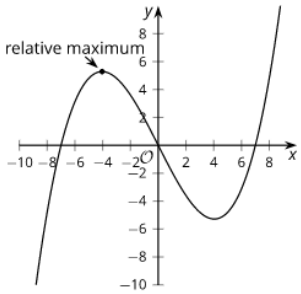
A polynomial function of x is a function given by a sum of terms, each of which is a constant times a whole number power of x. The word polynomial is used to refer both to the function and to the expression defining it.

degree

The degree of a polynomial in x is the highest exponent occuring on x when you write the polynomial out as a sum of non-zero constants times powers of x (with like terms collected).

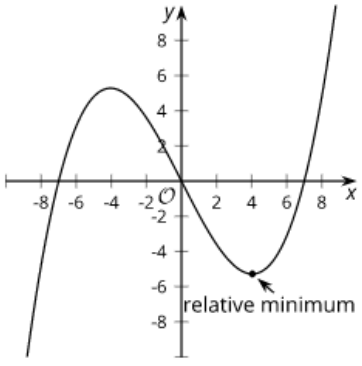
Relative maximum

A point on the graph of a function that is higher than any of the points around it.



Relative minimum

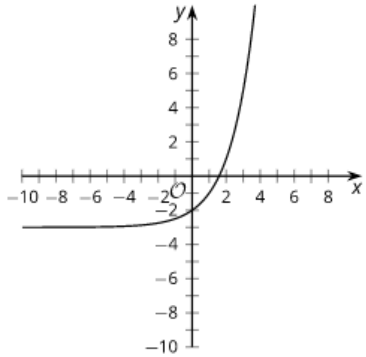
A point on the graph of a function that is lower than any of the points around it.



End behavior

How the outputs of a function change as we look at input values further and further from 0.

This function shows different end behavior in the positive and negative directions. In the positive direction the values get larger and larger. In the negative direction the values get closer and closer to -3.



Multiplicity

The power to which a factor occurs in the factored form of a polynomial.

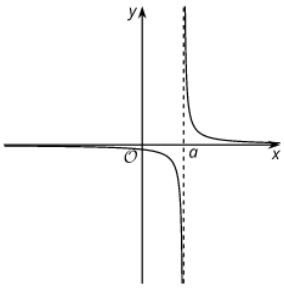
For example, in the polynomial $(x - 1)^2(x + 3)$, the factor $(x - 1)$ has multiplicity 2 and the factor $x + 3$ has multiplicity 1.

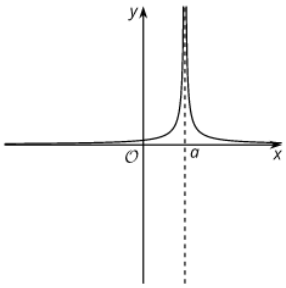
Rational function

A rational function is a function defined by a fraction with polynomials in the numerator and denominator. Rational functions include polynomials because a polynomial can be written as a fraction with denominator 1.

Vertical asymptote

The line $x = a$ is a vertical asymptote for a function f if f is undefined at$x = a$ and its outputs get larger and larger in the negative or positive direction when x gets closer and closer to a on each side of the line. This means the graph goes off in the vertical direction on either side of the line.





Horizontal asymptote

The line $y = c$ is a horizontal asymptote of a function if the outputs of the function get closer and closer to c as the inputs get larger and larger in either the positive or negative direction. This means the graph gets closer and closer to the line as you move to the right or left along the x-axis.

Identity

An equation which is true for all values of the variables in it.