

[2.16] Find partial fractions with *expand()*

A proper fraction is the ratio of two polynomials such that the degree of the numerator is less than the denominator, otherwise the fraction is called improper. Partial fractions is a method to convert an improper fraction to a sum of proper fractions. While the 89/92+ do not have a specific 'partial fractions' function, *expand()* performs that operation, as noted in the 89/92+ manual.

Some examples:

For $\frac{x^2+3x+5}{x+2}$

use `expand((x^2+3*x+5)/(x+2))`

which returns $\frac{3}{x+2} + x + 1$

For $\frac{x^4-x^3+8x^2-6x+7}{(x-1)(x^2+2)^2}$

use `expand((x^4-x^3+8*x^2-6*x+7)/((x-z)*(x^2+x)^2))`

which returns $\frac{-1}{x^2+2} + \frac{3x}{(x^2+2)^2} - \frac{1}{(x^2+2)^2} + \frac{1}{x-1}$