

8.5 Partial fractions

1. Divide if improper.
2. Factor denominator.
3. Decompose into partial fractions.

Heaviside's Method:


1. Cover one factor
2. Evaluate with the covered factor's root.
3. The value is the numerator for the covered factor.

ex. $\frac{x+5}{(x+2)(x-1)}$

ex. Decompose into partial fractions: $\frac{9x-4}{3x^2+x-10}$

ex. $\int \frac{12x+13}{8x^2+14x+3} dx$

ex. Solve $\frac{dP}{dt} = 0.08P\left(1 - \frac{P}{1000}\right)$ if $P_0 = 100$

 <http://www.math.neu.edu/~gilmore/U343su05files/logistic.pdf>