Example

Find f(x) given

How to do it Solve f (x)

We guess that

1

2

3

##note the matrix is not dependent on m(x) only on the bounds of the integrand

## also note that the matrix is Henkel meaning it takes up 2n-1

## this means you need to do n dot products on a vectors of

## reportedly modern methods will solve Hankle matrix sytems in as little as O(nlog2(n))

##https://www.sciencedirect.com/science/article/pii/S0024379598100757?via%3Dihub