The power solution

selected template will load here

This action is not available.

Assuming you know how to find a power series solution for a linear differential equation around the point #x_0#, you just have to expand the source term into a Taylor series around #x_0# and proceed as usual.

This may add considerable effort to the solution and if the power series solution can be identified as an elementary function, it"s generally easier to just solve the homogeneous equation and use either the method of undetermined coefficients or the method of variation of parameters.

where #c_0# is any constant.

Let us look at some details.