Answer on Question #81521- Math – Differential Equations

Solve the following ODE using the power series method:

(x + 2)y′′ + xy′ − y = 0

**Solution**

We assume there is a solution of the form

Then

and

Substituting in the differential equation, we get

This equation is true if the coefficient of is 0:

Put

:

:

:

:

:

The solution is