

The second-order differential equation $x^2 y'' + xy' + (x^2 - \nu^2)y = 0$ is called Bessel's equation of order ν , for $\nu \geq 0$. Solution of Bessel's equation are called Bessel functions. (hint: Example 4.12)

- 1) Find one Frobenius solution of Bessel's equation of order $\nu = 1$
- 2) Show the Frobenius series solution is convergent by using the ratio test (hint: Theorem 4.6)

記得提早動筆，準時(12/29)繳交！