

Q1. Classify singularities of the differential equations as being regular or irregular:

$$(x^2 - 9)y'' + 2(x - 3)y' + 7y = 0$$

Q2. Find indicial equation for the differential equation $3xy'' + y' - y = 0$ without using $y = \sum_{n=0}^{\infty} c_n x^{n+r}$.