Prob1: The interval of Convergence of $\sum_{n=0}^{\infty} \frac{n(x+2)^n}{3^{n+1}}$ is:

a/ $[-5, 1)$

b) $(-5, 1)$

c) $(-5, 1]$

d) $[-5, 1]$

e/ $[5, 1]$

Prob2:

Using The power Series method, The Solution of The initial value problem: $\begin{cases} (x-1)y'' - xy' + y = 0 \\ y(0) = 2, \; y'(0) = 6 \end{cases}$ is given by:

a/ $y = -2 + 6x - x^2 + \frac{2}{3}x^3 + \cdots$

b) $y = -2 + 6x - x^2 - \frac{2}{3}x^3 + \cdots$

c) $y = -2 + 6x - x^2 + \frac{1}{3}x^3 + \cdots$

d) $y = -2 + 6x - x^2 - \frac{1}{3}x^3 + \cdots$

e/ $y = -2 + 6x - x^2 + \frac{4}{3}x^3 + \cdots$