3. (10 points)

(a) Find the radius of convergence R of the following power series. *Show your work.*

$$\sum_{n=1}^{\infty} \frac{(n + n^3 \, 2^n)}{n^2 \, 3^n} \, (x - 1)^n \, .$$

ANSWER : $R \; = \;$ _____.

(b) What is the interval of convergence of the series?

_____ $< \quad x \quad <$ _____.