

1. Find the radius and interval of convergence of  $\sum_{n=1}^{\infty} \frac{(3x-2)^n}{n}$ .

2. Find the radius and interval of convergence of  $\sum_{n=1}^{\infty} (\ln n)x^n$ .

3. Find the radius and interval of convergence of  $\sum_{n=0}^{\infty} \frac{2^n x^n}{n!}$ .

Q: There is a word in the English language in which the first two letters signify a male, the first three letters signify a female, the first four signify a great man, and the whole word, a great woman. What is the word?