You should do the problems from the book first and check your answers to be sure you understand the methods.

Book problems:

Section 10.7  #3, 5, 9, 15, 33, 37

Section 10.8  #3, 5, 11, 21, 25, 27

Hand-in problems:

Section 10.7  2, 12, 38, 50

Section 10.8  4, 16, 22, 26, 42, 46

A  Find the radius of convergence of the following power series. If the radius is finite, decide whether or not the series converges (absolutely or conditionally) at the endpoints of the interval of convergence.

(i)  \( \sum_{n=1}^{\infty} \frac{n^{100}}{\sqrt{n!}} x^n \)

(ii)  \( \sum_{n=1}^{\infty} \frac{1}{n} (x - 3)^n \)

B  Find the Taylor series generated by \( \sin x \) at \( x = \frac{\pi}{4} \). What is its radius of convergence?