3. [12 points] For each of the following series, determine the interval of convergence and write it on the space provided to the right of the series. Be sure to show all appropriate work to justify your answer.

    a. [6 points] $\sum_{n=1}^{\infty} \frac{(-1)^n (x-2)^n}{n}$ _____

    b. [6 points] $\sum_{n=1}^{\infty} \frac{n! x^n}{n^{10}}$ _____