3. [10 points] Consider the power series
\[ \sum_{n=0}^{\infty} \frac{(n!)^2}{5^n(2n)!} (x - 9)^n. \]

a. [1 point] What is the center of the interval of convergence of this power series? 

**Answer:**

b. [5 points] What is the radius of convergence of this power series? Show your work.

**Answer:** Radius of convergence = 

c. [4 points] A certain power series \( \sum_{n=1}^{\infty} C_n (x - 4)^n \) converges when \( x = 1 \) and diverges when \( x = 13 \). Which of the following could be the radius of converge of this series? Circle all possibilities from the list below.

0 1 3 7 9 13 \( \infty \) NONE OF THESE