

2. [12 points] The Taylor series centered at $x = -2$ for a function $f(x)$ is given by:

$$f(x) = \sum_{n=0}^{\infty} \frac{((n+1)!)^2}{2^n(2n+1)!} (x+2)^{3n+1}$$

- a. [7 points] Determine the **radius** of convergence of the Taylor series above. Show all of your work. You do **not** need to find the interval of convergence.

Answer: _____

- b. [5 points] Find $f^{(60)}(-2)$ and $f^{(61)}(-2)$. You **do not** need to simplify your answers.

Answer: $f^{(60)}(-2) =$ _____ and $f^{(61)}(-2) =$ _____