1. (6) Find a range of $x$ values for which the function is defined, then state the radius of convergence.

$$f(x) = \sum_{n=1}^{\infty} \frac{(-1)^n (x - 2)^n}{n \cdot 3^n}$$

2. (4) Write the function as a Power Series.

$$f(x) = x \cdot \sin(5x^3)$$