

PRINT your name:

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Recall that the power series  $\sum_{n=0}^{\infty} x^n = \frac{1}{1-x}$  for certain values of  $x$ .

1. Write a power series that converges  $\frac{4x}{2+x^2}$  for some values of  $x$ . Make sure you explain how you arrived at your answer.

2. What is the center and radius of convergence of the series above? That is, the largest open interval on which the series converges is

$$\underline{\hspace{2cm}} < x < \underline{\hspace{2cm}}$$

Fully justify how you got this result.