

Name _____ Date _____ Period _____

Worksheet 1.9—Power Series II: Geometric Series

Show all work. No calculator except unless specifically stated.

On problems 1-5, find a power series for the given function, centered at the given value of a . Give the first four nonzero terms and the general term.

1. $f(x) = \frac{1}{1+x}$, $a = 0$

2. $f(x) = \frac{1}{1+x^2}$, $a = 0$

3. $f(x) = \frac{3}{x+2}$, $a = 0$

4. $f(x) = \frac{x}{1-2x}$, $a = 0$

5. $f(x) = \frac{1}{4-x}$, $a = 1$