

Assignment 9 - Extra Problems

1. For which values of x do the following series converge?

$$(a) \sum_{n=1}^{\infty} \frac{(-3)^n x^n}{\sqrt{n+1}} \qquad (b) \sum_{n=1}^{\infty} \frac{n(x+2)^n}{3^{n+1}}$$

2. Find a power series representation for the following functions, be sure to indicate the *domain of convergence* and *radius of convergence* in each case:

$$(a) f(x) = \frac{1}{2+x^2} \qquad (b) g(x) = \frac{4}{x+4}$$