Assignment #11 **Name** _____

Due 22 April 2015

1. Find the radius of convergence and the interval of convergence of the series $\sum_{n=0}^{\infty} \frac{1}{2^n\sqrt{n}}(x-4)^n$.

2. Find the sum of the series $\sum_{n=2}^{\infty} n(n-1)(3/4)^n$.

3. Suppose that the series $\sum_{n=0}^{\infty} c_n(x+2)^n$ converges at $x = 3$. Which of the following statements is *necessarily* true:
   (a) The radius of convergence of the power series is at most 5.
   (b) The series converges at $x = -6$.
   (c) The series $\sum_{n=0}^{\infty} c_n 2^n$ converges.

4. Develop a power series centered at 0 for each of the following functions. Indicate the interval on which the series represents the function.
   (a) $\dfrac{1}{1+3x}$

   (b) $\dfrac{1}{9-x^2}$

   (c) $\dfrac{1}{(1+x)^2}$