Name:	A#:	Section:

1. Determine the radius and interval of convergence of the following power series:

   (a) $\displaystyle\sum_{n=0}^{\infty} \frac{3^n}{n!} x^n$

   (b) $\displaystyle\sum_{n=1}^{\infty} \frac{2^n}{n} (x-1)^n$

2. (a) Use what you know about geometric series to expand $\dfrac{1}{1+3x}$ as a power series with centre $c = 0$.

(b) What is the interval of convergence of the series in (a)?

(c) Integrate the series in (a) to express $\ln(1 + 3x)$ as a power series centred at 0.

(d) What is the interval of convergence of the series in (c)?