Math 1211: Practice Worksheet #2 $\qquad$ Winter 2016

Name:	A#:	Section:

1. Give the precise meanings of the following statements:

    (a) $\displaystyle\sum_{n=1}^{\infty} a_n$ converges

    (b) $\displaystyle\sum_{n=1}^{\infty} a_n$ converges absolutely

    (c) $\displaystyle\sum_{n=1}^{\infty} a_n$ converges conditionally

2. Determine whether the following series converge absolutely, converge conditionally, or diverge:

    (a) $\displaystyle\sum_{n=2}^{\infty} \frac{(-1)^n}{\sqrt{n^3 - 1}}$

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

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

(a) $\displaystyle\sum_{n=1}^{\infty} \frac{n^2 x^n}{5^n}$

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

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