MATH 104 TUTORIAL 12 ANSWERS

1) a) converges
   b) diverges

2) a) converges conditionally
   b) diverges
   c) converges absolutely

. 3) a) (a) the radius is 1/3; the interval of convergence is $1/3 \leq x < 1$

(b) the interval of absolute convergence is $\frac{1}{3} < x < 1$

(c) the series converges conditionally at x = 1/3

. b) (a) the radius is 1; the interval of convergence is $-3 < x \leq -1$

(b) the interval of absolute convergence is $-3 < x < -1$

(c) the series converges conditionally at x = -1

c) (a) the radius is ∞ ; the series converges for all x
(b) the series converges absolutely for all x

(c) there are no values for which the series converges conditionally

d) (a) the radius is 3; the interval of convergence is $-2 \leq x \leq 4$

(b) the interval of absolute convergence is $-2 \leq x \leq 4$

(c) there are no values for which the series converges conditionally