

Math 126

Feb. 21, 2007

Quiz #4A

Name _____

(please print)

Show Your Work!

Good Luck!

1. Determine the interval of convergence of $\sum_{n=1}^{\infty} \frac{5(x-3)^n}{4n^3}$. _____

(Show your work! Check endpoints.)

(5)

2. Suppose you know that $\sum_{n=0}^{\infty} a_n (x-3.5)^n$ converges at $x=1$ and diverges at $x=9$.

Then (circle the correct letter):

- (1) at $x=-2$, the power series (a) must converge, (b) may conv. or diverge, or (c) must diverge.
 (1) at $x=5$, the power series (a) must converge, (b) may conv. or diverge, or (c) must diverge.
 (1) at $x=6$, the power series (a) must converge, (b) may conv. or diverge, or (c) must diverge.
 (1) at $x=8$, the power series (a) must converge, (b) may conv. or diverge, or (c) must diverge.

3. Determine the interval of convergence of $\sum_{n=1}^{\infty} n(2x-8)^n$. _____

(Suggestion: Use the Ratio Test.) Show your work!

(4)

3. Write the first 4 terms of the power series for each of the following:

(3) (a) $\frac{3}{1-x} =$ _____

(3) (b) $\frac{2}{1+x^3} =$ _____

(3) (c) $\frac{1}{9+x^2} =$ _____