Quiz 8

November 21st, 2016

Don't forget your name: _____ **Score:** _____ **/30**

1) Find the interval of convergence of each of the following series. Be sure to verify the hypotheses of any test you use.

a) (5 pts)

$$\sum_{n=0}^{\infty}(x+2)^n\frac{n!}{2^n}$$

b) (5 pts)

$$\sum_{n=0}^{\infty}(2x-3)^{2n}\frac{n}{5^n}$$

c) (5 pts)

$$\sum_{n=2}^{\infty}\frac{(x+1)^n}{n\cdot\ln(n)}$$

d) (5 pts)

$$\sum_{n=0}^{\infty}(x-2)^n\frac{(n!)^2}{(2n)!}$$

2)

(5 pts) If $\sum_{n=0}^{\infty}c_nx^n$ converges for $x=-6$, does it necessarily converge for $x=6$? Why or why not? What if $c_n\geq 0$ for all n?

(5 pts) If $\sum_{n=0}^{\infty}c_n(x-2)^n$ converges for $x=-6$, does it necessarily converge for $x=6$? Why or why not?

rules:

1. Do not write work or answers on this paper (just your name). Staple it on top of your work.
2. *This will be presentation quality.* Papers with scratch work or large erasures will not be graded, and multiple pages must be stapled together. Papers may not have frilly edges.
3. This is due at the beginning of class on Monday, November 28th.
4. Failure to follow these instructions will result in a score of 0.