

NAME:

MATH 133 - Michigan State University
November 14th, 2017.

Quiz 10

Clear your desk of everything except pens, pencils and erasers. **Show all your work.**
If you have a question raise your hand and I will come to you. **GRADE YOUR OWN QUIZ!**

1. Determine if the series below converges or diverges. Justify your reasoning.

$$\sum_{n=1}^{\infty} \frac{1}{n-100}.$$

2. Determine if the series below converges or diverges. Justify your reasoning.

$$\sum_{n=1}^{\infty} \sin^2\left(\frac{\pi}{n}\right).$$

3. Find the radius and interval of convergence for the series

$$\sum_{n=0}^{\infty} (nx)^n.$$

4. Find the radius and interval of convergence for the series

$$\sum_{n=0}^{\infty} \frac{2^n x^n}{n!}.$$

5. Find the sum of the series:

$$\sum_{n=1}^{\infty} \frac{4 \cdot 3^{n-1}}{2^{3n+1}}.$$

6. Determine if the series below converges or diverges. Justify your reasoning.

$$\sum_{n=1}^{\infty} \frac{1}{3^n - 2^n}.$$