

Math 172 Quiz 10.6

Sections: 10.2-10.6

5 November 2018

Name: _____
Point values in boxes.

1. 1 Please circle True or False, as appropriate.

(a) T / F: The Harmonic Series converges.

(b) T / F: If $a_n \rightarrow 0$ as $n \rightarrow \infty$, the series $\sum a_n$ converges.

2. 1 For $c \neq 0$, the p-series $\sum_{n=1}^{\infty} \frac{c}{n^p}$ converges for $p > 1$ and diverges for $p \leq 1$.

3. 2 For $c \neq 0$, the Geometric Series $\sum_{n=0}^{\infty} cr^n$ converges to $\frac{c}{1-r}$ for $|r| < 1$ and diverges for $|r| \geq 1$.

4. 4 Find the interval of convergence I for the following power series. For $x \in I$, find the sum.

$$\sum_{n=0}^{\infty} 3(2x)^n = \frac{3}{1-2x}$$

$$\text{for } |2x| < 1$$

$$\text{or } |x| < \frac{1}{2}$$

$$\text{or } x \in \left(-\frac{1}{2}, \frac{1}{2}\right)$$

5. 2 What specific topic, or topics, are you struggling with the most?

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.1.

1

 Please circle **T** rue or **F** alse, as appropriate.(a) **T** / **F**: The Harmonic Series converges.(b) **T** / **F**: If $a_n \rightarrow 0$ as $n \rightarrow \infty$, the series $\sum a_n$ converges.2.

1

 For $c \neq 0$, the p-series $\sum_{n=1}^{\infty} \frac{c}{n^p}$ converges for _____ and diverges for _____.3.

2

 For $c \neq 0$, the Geometric Series $\sum_{n=0}^{\infty} cr^n$ converges to _____ for
_____ and diverges for _____.4.

4

 Find the interval of convergence I for the following power series. For $x \in I$, find the sum.

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

5.

2

 What specific topic, or topics, are you struggling with the most?