

MAT 137 (Calculus II) Prof. Swift

Worksheet on Geometric Series and Power Series

1. $\sum_{n=0}^{\infty} 4r^n = 4 + 4r + 4r^2 + \cdots$ converges to _____ if $|r|$ _____ and diverges if $|r|$ _____.

2. $\sum_{n=0}^{\infty} 4x^n = 4 + 4x + 4x^2 + \cdots$ converges to _____ if $|x|$ _____ and diverges if $|x|$ _____.

The interval of convergence of the power series is all x such that _____ $< x <$ _____, which is (_____ , _____) in interval notation. The radius of convergence is $R =$ _____.

3. $\sum_{n=0}^{\infty} (2x)^n = 1 + 2x + 4x^2 + \cdots$ converges to _____ if $|x|$ _____ and diverges if $|x|$ _____.

The interval of convergence of the power series is all x such that _____ $< x <$ _____, which is (_____ , _____) in interval notation. The radius of convergence is $R =$ _____.