

The Secret Relationship of Geometric Series and Power Series Calculus

Section 10.6 Po...

Lesson 343 | Calculus BC | Power series and intervals of convergence

<https://www.youtube.com/watch?v=pLCHILkYx-8>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Find the radius and interval of convergence of $\sum_{m=1}^{\infty} (x-9)^m / (13^m m)$. Check both endpoints.

02

Find the radius and interval of convergence of $\sum_{m=1}^{\infty} (x-7)^m / (4^m m)$. Check both endpoints.

03

Find the radius and interval of convergence of $\sum_{m=1}^{\infty} (x-2)^m / (6^m m)$. Check both endpoints.

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04

Find the radius and interval of convergence of $\sum_{m=1}^{\infty} (x-6)^m / (11^m m)$.
Check both endpoints.

05

Find the radius and interval of convergence of $\sum_{m=1}^{\infty} (x-3)^m / (11^m m)$.
Check both endpoints.

06

Find the radius and interval of convergence of $\sum_{m=1}^{\infty} (x-8)^m / (8^m m)$. Check
both endpoints.

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01

Find the radius and interval of convergence of $\sum_{m=1}^{\infty} (x-9)^m / (13^m m)$. Check both endpoints.

Ratio limit $|x-9|/13$; convergence inside $|x-9| < 13$. Radius 13. At $x=4$, harmonic series diverges; at $x=-22$, alternating harmonic series converges. Interval $[-22, 4)$.

02

Find the radius and interval of convergence of $\sum_{m=1}^{\infty} (x-7)^m / (4^m m)$. Check both endpoints.

Ratio limit $|x-7|/4$; convergence inside $|x-7| < 4$. Radius 4. At $x=-3$, harmonic series diverges; at $x=-11$, alternating harmonic series converges. Interval $[-11, -3)$.

03

Find the radius and interval of convergence of $\sum_{m=1}^{\infty} (x-2)^m / (6^m m)$. Check both endpoints.

Ratio limit $|x-2|/6$; convergence inside $|x-2| < 6$. Radius 6. At $x=8$, harmonic series diverges; at $x=-4$, alternating harmonic series converges. Interval $[-4, 8)$.

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04

Find the radius and interval of convergence of $\sum$ from $m=1$ to ∞ of $(x-6)^m/(11^m m)$. Check both endpoints.

Ratio limit $|x-6|/11$; convergence inside $|x-6|<11$. Radius 11. At $x=5$, harmonic series diverges; at $x=-17$, alternating harmonic series converges. Interval $[-17,5)$.

05

Find the radius and interval of convergence of $\sum$ from $m=1$ to ∞ of $(x-3)^m/(11^m m)$. Check both endpoints.

Ratio limit $|x-3|/11$; convergence inside $|x-3|<11$. Radius 11. At $x=8$, harmonic series diverges; at $x=-14$, alternating harmonic series converges. Interval $[-14,8)$.

06

Find the radius and interval of convergence of $\sum$ from $m=1$ to ∞ of $(x-8)^m/(8^m m)$. Check both endpoints.

Ratio limit $|x-8|/8$; convergence inside $|x-8|<8$. Radius 8. At $x=0$, harmonic series diverges; at $x=-16$, alternating harmonic series converges. Interval $[-16,0)$.