

Calculus 2 Workbook

Telescoping series



CONVERGENCE OF A TELESCOPING SERIES

■ 1. Say whether the telescoping series converges or diverges.

$$\sum_{n=1}^{\infty} \left(5^n - 5^{n-1} \right)$$

■ 2. Say whether the telescoping series converges or diverges.

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

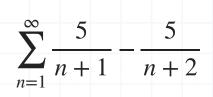
■ 3. Say whether the telescoping series converges or diverges.

$$\sum_{n=1}^{\infty} \frac{2}{n^2 + n}$$

■ 4. Say whether the telescoping series converges or diverges.

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

■ 5. Say whether the telescoping series converges or diverges.





SUM OF A TELESCOPING SERIES

■ 1. Calculate the sum of the telescoping series.

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

2. Calculate the sum of the telescoping series.

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

■ 3. Calculate the sum of the telescoping series.

$$\sum_{n=1}^{\infty} \frac{6}{n+2} - \frac{6}{n+3}$$





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