

1. Use the comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{1}{n^3 + 1}$

2. Use the limit comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{1}{n^3 + 1}$

3. Use the comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{n^2 + 3n + 1}{n^3 + 2n^2 + n + 1}$

4. Use the limit comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{n^2 + 3n + 1}{n^3 + 2n^2 + n + 1}$

5. Use the comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{1}{\sqrt{n^3 + 2n + n + 1}}$

6. Use the limit comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{1}{\sqrt{n^3 + 2n + n + 1}}$

7. Use the comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{n}{\sqrt{n^3 + 1}}$

8. Use the comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{\ln n}{n^3}$

9. Use the limit comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{\sin\left(\frac{1}{n}\right)}{\sqrt{n}}$

10. Use the comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{1}{2^n + n^2}$

11. Use the limit comparison test to test the series for convergence:  $\sum_{n=1}^{\infty} \frac{1}{2^n + n^2}$