The Root Test

Taken From: Calculus of a Single Variable (8th Edition): by Larsen, Hostetler and Edwards

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

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

3. $\sum_{n=2}^{\infty}\left(\frac{2n+1}{n-1}\right)^{n}$

4. $\sum_{n=1}^{\infty}\left(\frac{4n+3}{2n-1}\right)^{n}$

5. $\sum_{n=2}^{\infty}\frac{(-1)^{n}}{(\ln n)^{n}}$

6. $\sum_{n=1}^{\infty}\left(\frac{-3n}{2n+1}\right)^{3n}$

7. $\sum_{n=1}^{\infty}\left(2\sqrt[n]{n}+1\right)^{n}$

8. $\sum_{n=0}^{\infty}\left(e^{-n}\right)$

9. $\sum_{n=1}^{\infty}\left(\frac{n}{4^{n}}\right)$

10. $\sum_{n=1}^{\infty}\left(\frac{n}{500}\right)^{n}$

11. $\sum_{n=1}^{\infty}\left(\frac{1}{n}-\frac{1}{n^{2}}\right)^{n}$

12. $\sum_{n=1}^{\infty}\left(\frac{\ln(n)}{n}\right)^{n}$

13. $\sum_{n=2}^{\infty}\frac{n}{(\ln n)^{n}}$

14. $\sum_{n=1}^{\infty}\frac{(n!)^{n}}{(n^{n})^{2}}$