

1. $a_n = \frac{3 + 5n^2}{1 + n}$

2. $a_n = \cos\left(\frac{n\pi}{n+1}\right)$

3. $a_n = e^{2n/(n+2)}$

4. $a_n = \frac{(-1)^n}{2\sqrt{n}}$

5. $a_n = \ln(n+1) - \ln(n)$

6. $a_n = n \sin\left(\frac{1}{n}\right)$

7. $a_n = \arctan(\ln n)$

8. $a_n = \sqrt[n]{n}$

9. $a_n = \frac{n^2}{2^n}$

10. $a_n = \frac{n \sin^2 n}{4n}$

11. $a_n = \frac{5n^3 + 4n - 3}{n^4 + 4n^2}$

12. $a_n = \frac{\ln n}{\sqrt{n}}$