

GAME 1. Guess the convergence of the series.

1. $\sum_{k=1}^{\infty} \frac{5}{k}$

2. $\sum_{k=1}^{\infty} \frac{1}{k(k^{0.005} + 1)}$

3. $\sum_{k=1}^{\infty} \frac{1}{k^{k-2}}$

4. $\sum_{k=1}^{\infty} \frac{(k^2 - k + 1)k^5}{(k + 3)^3 \sqrt{k^3 + k + 7}}$

5. $\sum_{k=1}^{\infty} \frac{3k^5}{k!}$

6. $\sum_{k=1}^{\infty} \frac{k!k^6}{(k + 3)!}$

7. $\sum_{k=1}^{\infty} \cos\left(\frac{1}{k^3 \sqrt{k + 4}}\right)$

8. $\sum_{k=1}^{\infty} \sin\left(\left(k + \frac{1}{2}\right)\pi\right) \frac{\ln^8 k}{k}$

9. $\sum_{k=1}^{\infty} \left(1 - e^{\frac{k(k^2+5)((k-3)!)}{k!}}\right)$

10. $\sum_{k=1}^{\infty} \frac{|\sin k|}{k}$