## Convergence of Series III - Worksheet

1. Is 
$$\sum_{n=1}^{\infty} \frac{\ln(x)}{x^3}$$
 convergent? Why?

1. Is 
$$\sum_{n=1}^{\infty} \frac{\ln(x)}{x^3}$$
 convergent? Why?

6. Is  $\sum_{n=1}^{\infty} \frac{\ln(n) + 1}{\sqrt{n}}$  convergent? Why?

2. Is 
$$\sum_{n=0}^{\infty} \frac{(-1)^n \sin(n)}{n^2}$$
 convergent? Why?

7. Is 
$$\sum_{n=1}^{\infty} \frac{1}{\sqrt[5]{n+5}}$$
 convergent? Why?

3. Is 
$$\sum_{n=0}^{\infty} \frac{(-1)^n n^3}{n^3 + n^2 + 3}$$
 convergent? Why?

8. Is 
$$\sum_{n=0}^{\infty} \frac{(-1)^n}{n \ln(n)}$$
 convergent? Why?

4. Is 
$$\sum_{n=1}^{\infty} \frac{\sqrt{2n^2+1}}{(n^2+1)^2}$$
 convergent? Why?

9. Is 
$$\sum_{n=0}^{\infty} \frac{n+\sqrt{n}}{n}$$
 convergent? Why?

5. Is 
$$\sum_{n=1}^{\infty} \frac{(-1)^{n+3}\sqrt{n+2}}{n+4}$$
 convergent? Why?

10. Is 
$$\sum_{n=0}^{\infty} \frac{(-1)^n n!}{(n+3)!}$$
 convergent? Why?

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