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

Example 2. Is $\sum_{n=1}^{\infty}(-1)^{n}\frac{1}{n}$ absolutely convergent?

Determine whether the series is absolutely convergent.

Example 3. $\sum_{n=1}^{\infty}\frac{\sin n}{n^2}$

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

Example 5. $\sum_{n=1}^{\infty}\frac{n^3}{5^n}$

Example 6. $\sum_{n=1}^{\infty}(-1)^{n}\frac{n^2}{n^3+5}$

Use Ratio Test to determine whether the series is absolutely convergent.

Example 7. $\sum_{n=1}^{\infty}\frac{(-1)^n}{n^3}$

Example 8. $\sum_{n=1}^{\infty}\frac{(-1.1)^n}{n^3}$

Example 9. $\sum_{n=1}^{\infty}n^2(2/3)^n$

Example 10. $\sum_{n=1}^{\infty}\frac{10^n}{n!}$

Example 11. $\sum_{n=1}^{\infty}\frac{x^n}{n!}$

Example 12. $\sum_{n=1}^{\infty}\frac{n!}{100^n}$

Use Root Test to determine whether the series is absolutely convergent.

Example 14*. $\sum_{n=1}^{\infty}\left(\frac{n+4}{3n-2}\right)^n$