Direct Comparison Test and Limit Comparison Test

1. Determine if the series converges or diverges.

$\sum_{n=1} \frac{n}{5n^3+1}$

2. Determine if the series converges or diverges.

$\sum_{n=1} \frac{n^4}{6n^3-3}$

3. Determine if the series converges or diverges.

$\sum_{n=1} \frac{n+3}{n\sqrt{n}}$

4. Determine if the series converges or diverges.

$\sum_{n=1} \frac{7^n}{1+8^n}$

5. Determine if the series converges or diverges.

$\sum_{n=1} \frac{3\sqrt{n}}{n-6}$

6. Determine if the series converges or diverges.

$\sum_{n=1} \frac{1+5^n}{1+4^n}$

7. Determine if the series converges or diverges.

$\sum_{n=1} \frac{sin^2(n)}{n^7+4}$

8. Determine if the series converges or diverges.

$\sum_{n=1} \frac{\sqrt{n+2}}{4n^2+n+1}$

9. Determine if the series converges or diverges.

$\sum_{n=1} \frac{2+2n}{(5+n^2)^5}$

10. Determine if the series converges or diverges.

$\sum_{n=1} \frac{n+4}{\sqrt[3]{n^{11}+n^3}}$