Name: Section: 1 2

Determine if the following series converge or diverge. You may use any technique up to section 10.3, the techniques of geometric series, telescoping series, p-series, the divergence test, and the integral test. Find the sum if the series is a convergent geometric or telescoping series. Clearly explain your reasoning.

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

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

3. $\displaystyle\sum_{n=2}^{\infty} \frac{2^n}{5^{n-2}}$

4. $\displaystyle\sum_{n=1}^{\infty} \frac{1}{\sqrt[5]{n}}$

5. $\displaystyle\sum_{n=1}^{\infty} (1.1)^n$

6. $\displaystyle\sum_{n=1}^{\infty} \frac{1}{1+n^2}$

7. $\displaystyle\sum_{n=1}^{\infty} \left(1+\frac{2}{n}\right)^n$

8. $\displaystyle\sum_{n=1}^{\infty} \left(\frac{1}{\sqrt{n}} - \frac{1}{\sqrt{n+1}}\right)$

9. $\displaystyle\sum_{n=2}^{\infty} \frac{1}{n \ln n}$