

Name:

Section: 5 6 9 10

Determine if the following series converge or diverge. You may use any technique up to section 2.3; 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.
$$\sum_{n=1}^{\infty} \frac{2}{n^3}$$

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

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

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

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

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

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

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

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