

Name:

Section: 7 8

Determine if the following series converge or diverge. You may use the techniques of geometric series, telescoping series, the divergence test, p -series, and the integral test. Show your work and clearly state which test you are using.

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

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

3.
$$\sum_{n=1}^{\infty} \frac{2^n}{7^{n-2}}$$

4.
$$\sum_{n=1}^{\infty} \frac{1}{\sqrt[3]{n}}$$

$$5. \sum_{n=1}^{\infty} \frac{1}{1+n^2}$$

$$6. \sum_{n=1}^{\infty} \left(1 + \frac{3}{n}\right)^n$$

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

$$8. \sum_{n=2}^{\infty} \frac{1}{n \ln n}$$