

**3–16** List the first five terms of the sequence.

[11-1] 5

**5.**  $\{2^n + n\}_{n=2}^{\infty}$

[11-1] 9

**9.**  $a_n = \cos n\pi$

**27–62** Determine whether the sequence converges or diverges. If it converges, find the limit.

[11-1] 27

**27.**  $a_n = \frac{5}{n+2}$

[11-1] 35

**35.**  $a_n = e^{-1/\sqrt{n}}$

[11-1] 58

**58.**  $a_n = n - \sqrt{n+1}\sqrt{n+3}$

**17–22** Determine whether the series is convergent or divergent by expressing  $s_n$  as a telescoping sum (as in Example 2). If it is convergent, find its sum.

[11-2] 17

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

[11-2] 20

20. 
$$\sum_{n=1}^{\infty} \ln \frac{n}{n+1}$$

**23–32** Determine whether the geometric series is convergent or divergent. If it is convergent, find its sum.

[11-2] 29

29. 
$$\sum_{n=1}^{\infty} \frac{(-3)^{n-1}}{4^n}$$

[11-2] 32

32. 
$$\sum_{n=1}^{\infty} \frac{6 \cdot 2^{2n-1}}{3^n}$$

**33–50** Determine whether the series is convergent or divergent. If it is convergent, find its sum.

[11-2] 37

37. 
$$\sum_{n=1}^{\infty} \frac{2+n}{1-2n}$$

**3–10** Use the Integral Test to determine whether the series is convergent or divergent.

[11-3] 5

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

[11-3] 9

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

**11–28** Determine whether the series is convergent or divergent.

[11-3] 17

$$17. \sum_{n=1}^{\infty} \frac{\sqrt{n} + 4}{n^2}$$

[11-3] 25

$$25. \sum_{k=1}^{\infty} k e^{-k}$$

**7–40** Determine whether the series converges or diverges.

[11-4] 11

$$11. \sum_{n=1}^{\infty} \frac{9^n}{3 + 10^n}$$

[11-4] 31

$$31. \sum_{n=1}^{\infty} \frac{2 + \sin n}{n^2}$$

**22–34** Determine whether the series is absolutely convergent, conditionally convergent, or divergent.

[11-5] 22

$$22. \sum_{n=1}^{\infty} \frac{(-1)^n}{n^4}$$

[11-5] 29

$$29. \sum_{n=1}^{\infty} \frac{1 + 2 \sin n}{n^3}$$

[11-5] 31

$$31. \sum_{n=2}^{\infty} \frac{(-1)^n}{\ln n}$$

**41–44** Approximate the sum of the series correct to four decimal places.

[11-5] 41

**41.** 
$$\sum_{n=1}^{\infty} \frac{(-1)^n}{(2n)!}$$