



**Skills Practice**  
**Geometric Sequences**

# Act. #73

Find the next two terms of each geometric sequence.

1.  $-1, -2, -4, \dots$

2.  $6, 3, \frac{3}{2}, \dots$

3.  $-5, -15, -45, \dots$

4.  $729, -243, 81, \dots$

5.  $1536, 384, 96, \dots$

6.  $64, 160, 400, \dots$

Find the first five terms of each geometric sequence described.

7.  $a_1 = 6, r = 2$

8.  $a_1 = -27, r = 3$

9.  $a_1 = -15, r = -1$

10.  $a_1 = 3, r = 4$

11.  $a_1 = 1, r = \frac{1}{2}$

12.  $a_1 = 216, r = -\frac{1}{3}$

Find the indicated term of each geometric sequence.

13.  $a_1 = 5, r = 2, n = 6$

14.  $a_1 = 18, r = 3, n = 6$

15.  $a_1 = -3, r = -2, n = 5$

16.  $a_1 = -20, r = -2, n = 9$

17.  $a_8$  for  $-12, -6, -3, \dots$

18.  $a_7$  for  $80, \frac{80}{3}, \frac{80}{9}, \dots$

Write an equation for the  $n$ th term of each geometric sequence.

19.  $3, 9, 27, \dots$

20.  $-1, -3, -9, \dots$

21.  $2, -6, 18, \dots$

22.  $5, 10, 20, \dots$

Find the geometric means in each sequence.

23.  $4, \underline{\quad}, \underline{\quad}, \underline{\quad}, 64$

24.  $1, \underline{\quad}, \underline{\quad}, \underline{\quad}, 81$

# Skills Practice

## Geometric Series

# Act. #74

Find  $S_n$  for each geometric series described.

1.  $a_1 = 2, a_5 = 162, r = 3$

2.  $a_1 = 4, a_6 = 12,500, r = 5$

3.  $a_1 = 1, a_8 = -1, r = -1$

4.  $a_1 = 4, a_n = 256, r = -2$

5.  $a_1 = 1, a_n = 729, r = -3$

6.  $a_1 = 2, r = -4, n = 5$

7.  $a_1 = -8, r = 2, n = 4$

8.  $a_1 = 3, r = -2, n = 12$

9.  $a_1 = 8, r = 3, n = 5$

10.  $a_1 = 6, a_n = \frac{3}{8}, r = \frac{1}{2}$

11.  $a_1 = 8, r = \frac{1}{2}, n = 7$

12.  $a_1 = 2, r = -\frac{1}{2}, n = 6$

Find the sum of each geometric series.

13.  $4 + 8 + 16 + \dots$  to 5 terms

14.  $-1 - 3 - 9 - \dots$  to 6 terms

15.  $3 + 6 + 12 + \dots$  to 5 terms

16.  $-15 + 30 - 60 + \dots$  to 7 terms

17.  $\sum_{n=1}^4 3^n - 1$

18.  $\sum_{n=1}^5 (-2)^{n-1}$

19.  $\sum_{n=1}^4 \left(\frac{1}{3}\right)^{n-1}$

20.  $\sum_{n=1}^9 2(-3)^{n-1}$

Find the indicated term for each geometric series described.

21.  $S_n = 1275, a_n = 640, r = 2; a_1$

22.  $S_n = -40, a_n = -54, r = -3; a_1$

23.  $S_n = 99, n = 5, r = -\frac{1}{2}; a_1$

24.  $S_n = 39,360, n = 8, r = 3; a_1$