Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Geometric Sequences

**Determine whether each sequence is geometric. If so, find the common ratio.**

**1.** 3, 9, 27, 81, … **2.** 4, −8, 16, −32, ... **3.** −5, 0, 5, 10, ... ...

**Find the tenth term of each geometric sequence.**

**4.** −2, 6, −18, ...

**5.** −3, −12, −48, ...

**6.** ,..

**7.** When a pendulum swings freely, the length of its arc decreases geometrically. Find each missing arc length.

**a.** 20th arc is 20 in.; 22nd arc is 18.5 in.

**b.** 8th arc is 27 mm; 10th arc is 3 mm

**Find the missing term of each geometric sequence. It could be the geometric mean or its opposite.**

**8.** 4,  , 16, ... **9.** 2,  , 8, ... **10.** 2,  , 50, ...

**Identify each sequence as *arithmetic, geometric,* or *neither*. Then find the next two terms.**

**11**. 9, 3, 1, , … **12.** 2, −2, 2, −2, ... **13.** 1, −2, −5, −8, ...

**Write an explicit formula for each sequence. Then generate the first three terms.**

**14.** *a*1 = 3, *r* = −2 **15.** *a*1 = 5, *r* = 3 **16.** *a*1 = −1, *r* = 4

**17.** *a*1= −2, *r* = −3 **18.** *a*1= 32, *r* = −0.5 **19.** *a*1= 2187, 