

UNIT 3 • LINEAR AND EXPONENTIAL FUNCTIONS**Lesson 8: Arithmetic and Geometric Sequences****Practice 3.8.2: Geometric Sequences**

Find the constant ratio and write the explicit formula for the n th term of each geometric sequence.

1. 1, 2, 4, 8, 16, ...

2. $10, -2, \frac{2}{5}, -\frac{2}{25}, \dots$

3. 5, 15, 45, 135, ...

4. 320, -80, 20, -5, ...

5. Find the first five terms of the geometric sequence defined as follows:

$$a_{n-1} = a_1(3); a_1 = -1$$

6. Find the first five terms of the geometric sequence defined as follows:

$$a_{n-1} = a_1\left(\frac{1}{4}\right); a_1 = 216$$

7. Jade is training for a marathon. During her first week of training, each run she completes is 90 minutes long. She increases the length of each run by 10% each week. Write the explicit formula to represent the length of her run after n weeks.

8. You are opening a savings account with \$500 that you have saved. The bank offers 3.2% simple interest each year. How much money will you have in your account after 7 years?

9. Nigel is participating in a read-a-thon. The number of pages he reads each night follows a geometric sequence. On the second day of the read-a-thon, Nigel read 8 pages. On the fifth day of the read-a-thon, he read 64 pages. Write an explicit formula to represent this scenario.

10. Mr. Galloway purchased a car for \$20,000. The car retains 85% of its value each year. How much will the car be worth in five years?