

NAME: _____

UNIT 3 • LINEAR AND EXPONENTIAL FUNCTIONS

Lesson 8: Arithmetic and Geometric Sequences

Practice 3.8.1: Arithmetic Sequences

Find the common difference and write the explicit formula for the n th term of each arithmetic sequence.

1. 27, 31, 35, 39, ...

2. 4, -3, -10, -17, ...

3. -101, -87, -73, -59, ...

4. $\frac{1}{2}, \frac{5}{2}, \frac{9}{2}, \frac{13}{2}, \dots$

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

$$a_{n-1} = a_1 + 2.7 = 3.2$$

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

$$a_{n-1} = a_1 - 22; a_1 = 18$$

7. You have read 25 pages of a book. You plan to read an additional 10 pages each night. Write the explicit formula to represent the number of pages you will read after n nights.

8. You are going on vacation. You have \$105 to bring with you. You expect to spend \$15 each day. You want to have \$30 remaining at the end of the vacation. Write an explicit formula to represent this scenario. For how many days can you spend \$15 each day?

9. A bicyclist is training for a race. On the first day of training, she rides 12 miles. She increases the distance she rides by 3 miles each day. Write an explicit formula to represent this scenario. How many miles will the bicyclist ride on her ninth day of training?

10. Sofie needs to complete community service hours for her service club. She needs to complete 150 hours to earn a merit badge. Sofie has already completed 65 hours. Write an explicit formula to represent this scenario. If she volunteers 5 hours each week, in how many weeks will she have completed the hours to earn the merit badge?