Practice 2.9.1: Sequences As Functions A

Use what you know about sequences to complete each problem.

1. What is the fourth term in the sequence given by the formula $a_n = 10n - 12$?

2. What is the fourth term in the sequence given by the formula $a_n = a_{n-1} + 3$ if $a_1 = -4$?

3. Graph the first 5 terms of the sequence given by the formula $a_n = 5n - 7$.

4. Graph the first 5 terms of the sequence given by the formula $a_n = 2n - 2$.

5. What is the third term in the sequence given by the formula $a_n = a_{n-1} + 4$ if $a_1 = 2$?

6. What is the fourth term in the sequence given by the formula $a_n = 13 - 2n$?

7. Complete and graph the sequence: 2, 6, 10, 14, a_5, 22.

8. Complete and graph the sequence: 13, 21, 29, 37, a_5, a_6.

9. A radio show breaks for news every 30 minutes. After every fourth news report, the newscaster reads the daily sports highlights. If the radio show began at 12:01 P.M. and the first news report was read at 12:31 P.M., at what time will the daily sports highlights be read?

10. Water stations are set up periodically along a marathon route. The water stations are set up every 3.5 miles. If the first station is at the 5-mile mark, at what mile mark will the fifth water station be?

Practice 2.9.2: Arithmetic Sequences A

For problems 1–4, find the common difference and write the explicit formula for the nth term of each arithmetic sequence.

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

2. 4, –3, –10, –17, ...

3. –101, –87, –73, –59, ...

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

Use the given information to complete problems 5–10.

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

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

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

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

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 take 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?