

## Lesson 3 Practice Problems

1. Here are the first two terms of some different arithmetic sequences:

- a. -2, 4
- b. 11, 111
- c. 5, 7.5
- d. 5, -4

What are the next three terms of each sequence?

2. For each sequence, decide whether it could be arithmetic, geometric, or neither.

- a. 200, 40, 8, ...
- b. 2, 4, 16, ...
- c. 10, 20, 30, ...
- d. 100, 20, 4, ...
- e. 6, 12, 18, ...

3. Complete each arithmetic sequence with its missing terms, then state the rate of change for each sequence.

- a. -3, -2, \_\_, \_\_, 1
- b. \_\_, 13, 25, \_\_, \_\_
- c. 1, .25, \_\_, -1.25, \_\_
- d. 92, \_\_, \_\_, \_\_, 80

4. A sequence starts with the terms 1 and 10.

- a. Find the next two terms if it is arithmetic: 1, 10, \_\_, \_\_.
- b. Find the next two terms if it is geometric: 1, 10, \_\_, \_\_.
- c. Find two possible next terms if it is neither arithmetic nor geometric: 1, 10, \_\_, \_\_.

5. Complete each geometric sequence with the missing terms. Then find the growth factor for each.

- a. \_\_, 5, 25, \_\_, 625
- b. -1, \_\_, -36, 216, \_\_
- c. 10, 5, \_\_, \_\_, 0.625
- d. \_\_, \_\_, 36, -108, \_\_
- e. \_\_, 12, 18, 27, \_\_

(From Unit 1, Lesson 2.)

6. The first term of a sequence is 4.

- a. Choose a growth factor and list the next 3 terms of a geometric sequence.
- b. Choose a *different* growth factor and list the next 3 terms of a geometric sequence.

(From Unit 1, Lesson 2.)

7. Here is a rule that can be used to build a sequence of numbers once a starting number is chosen: Each number is two times three less than the previous number.

- a. Starting with the number 0, build a sequence of 5 numbers.
- b. Starting with the number 3, build a sequence of 5 numbers.
- c. Can you choose a starting point so that the first 5 numbers in your sequence are all positive? Explain your reasoning.

(From Unit 1, Lesson 1.)