

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.)