Unit 1: Sequences and Functions

ADVANCED · SET 2

Name: _____ Date: _____

Show all work. Give each answer as an exact value (number, fraction, or coordinate pair) in the form requested.

1. An arithmetic sequence has a_3 = 17 and a_8 = 52. Find the common difference d.

Answer: _____

2. For the arithmetic sequence in the previous style, a_3 = 17 and a_8 = 52. Find the first term a_1.

Answer: _____

3. A geometric sequence has a_2 = 24 and a_5 = 3. Find the common ratio r.

Answer: _____

4. A geometric sequence has first term 5 and common ratio 3. Written as an exponential function f(n) = a·b^(n-1), find f(6).

Answer: _____

5. An arithmetic sequence models a linear function with a_1 = -4 and a_1_2 = 40 (the 12th term is 40). Find the common difference d as a fraction.

Answer: _____

6. The arithmetic sequence has a_1 = -4 and common difference 4. Find the value of n for which a_n = 100.

Answer: _____

7. A geometric sequence has a_4 = 54 and a_7 = 1458. Find a_1.

Answer: _____

8. The explicit formula for a geometric sequence is g(n) = 2·(3/2)^(n-1). Find g(4) as a fraction.

Answer: _____

9. An arithmetic sequence and a geometric sequence both start at 8. The arithmetic one has d = 5; the geometric one has r = 2. For n = 4 (the 4th term), find the positive difference between the geometric term and the arithmetic term.

Answer: _____

10. The sum of the first 6 terms of a geometric sequence with first term 4 and common ratio 3 is S. Find S.

Answer: _____

11. An arithmetic sequence has a_5 = -2 and a_11 = -20. Find a_1.

Answer: _____