

Unit 1: Sequences and Functions

CONCEPT

Name: _____ Date: _____

Show your work and write each answer as a single exact value (number, fraction, or coordinate pair).

1. An arithmetic sequence has first term $a(1) = 4$ and common difference $d = 3$. Find the second term $a(2)$.

Answer: _____

2. An arithmetic sequence starts 5, 8, 11, 14, Find the common difference d .

Answer: _____

3. A geometric sequence starts 2, 6, 18, 54, Find the common ratio r .

Answer: _____

4. A geometric sequence has first term $a(1) = 5$ and common ratio $r = 2$. Find the second term $a(2)$.

Answer: _____

5. An arithmetic sequence has $a(1) = 2$ and $d = 5$. Use $a(n) = a(1) + (n - 1)d$ to find $a(4)$.

Answer: _____

6. A geometric sequence has $a(1) = 3$ and $r = 2$. Use $a(n) = a(1) \times r^{(n-1)}$ to find $a(3)$.

Answer: _____

7. An arithmetic sequence is modeled by the linear function $f(n) = 2 + 3n$. Find $f(5)$.

Answer: _____

8. A geometric sequence is modeled by the exponential function $g(n) = 4 \times 2^n$. Find $g(3)$.

Answer: _____

9. An arithmetic sequence has terms $a(1) = 10$ and $a(2) = 7$. Find the common difference d .

Answer: _____

10. A geometric sequence has $a(1) = 100$ and $a(2) = 50$. Find the common ratio r as a fraction.

Answer: _____

11. The linear function $f(n) = 1 + 4(n - 1)$ models an arithmetic sequence. Find the first term $a(1) = f(1)$.

Answer: _____

12. The exponential function $g(n) = 2 \times 3^{(n-1)}$ models a geometric sequence. Find the first term $a(1) = g(1)$.

Answer: _____