

7.5 Practice B

In Exercises 1–6, write the first six terms of the sequence.

1. $a_1 = 1$

$a_n = a_{n-1} + 9$

2. $f(0) = 32$

$f(n) = \frac{1}{4}f(n-1)$

3. $f(0) = 24$

$f(n) = \frac{3}{2}f(n-1)$

4. $a_1 = 1$

$a_n = (a_{n-1})^2 - 1$

5. $f(0) = 1, f(1) = 4$

$f(n) = f(n-2) - f(n-1)$

6. $f(1) = 256, f(2) = 2$

$f(n) = \frac{f(n-2)}{f(n-1)}$

In Exercises 7–14, write a recursive rule for the sequence.

7. 30, 21, 12, 3, -6, ...

8. 3, -15, 75, -375, ...

9. 28, 4, $\frac{4}{7}$, $\frac{4}{49}$, $\frac{4}{343}$, ...

10. 1, 12, 23, 34, 45, ...

11. 2, 6, 12, 72, 864, ...

12. 1, 7, 8, 15, 23, ...

13. 61, 39, 22, 17, 5, ...

14. -5, -3, 0, 4, 9, ...

In Exercises 15–20, write a recursive rule for the sequence.

15. $a_n = -7 + 3n$

16. $a_n = 6(15)^{n-1}$

17. $a_n = -16(9)^{n-1}$

18. $a_n = -2.4 + 0.3n$

19. $a_n = -\frac{1}{3}\left(\frac{1}{5}\right)^{n-1}$

20. $a_n = \frac{1}{2}(7)^{n-1}$

21. The rate of growth of an organism is given by the explicit rule $a_n = 26(1.002)^{n-1}$, where n is the number of hours in an incubator. Write a recursive rule for the rate of growth of the organism.

In Exercises 22–25, write an explicit rule for the sequence.

22. $a_1 = -19, a_n = a_{n-1} + 7.2$

23. $a_1 = -7, a_n = 0.45a_{n-1}$

24. $a_1 = 4, a_n = a_{n-1} + \frac{1}{6}$

25. $a_1 = -9, a_n = \frac{1}{3}a_{n-1}$