

Practice 10-1 Patterns and Sequences

Write a rule to describe each sequence. Then find the next three terms in the sequence.

1. 3, 8, 13, 18, __, __, __

2. 7, 14, 28, 56, __, __, __

3. 32, 8, 2, $\frac{1}{2}$, __, __, __

4. 14, 11, 8, 5, __, __, __

5. 35, 23, 11, -1, __, __, __

6. 3,000, 300, 30, 3, __, __, __

Find the next three terms in each sequence. Identify each as arithmetic, geometric, or neither. For each arithmetic or geometric sequence, find the common difference or ratio.

7. 7.1, 7.5, 7.9, 8.3, __, __, __

8. 5, 6, 8, 11, 15, 20, __, __, __

9. 8,000, 4,000, 2,000, 1,000, __, __, __

10. 92, 89, 86, 83, __, __, __

11. -1, 2, -4, 8, __, __, __

12. 2.3, 2.03, 2.003, 2.0003, __, __, __

13. 1, 3, 6, 8, 16, 18, 36, __, __, __

14. 140, 133, 126, 119, __, __, __

15. 3, 9, 27, 81, __, __, __

16. 540, 270, 90, 22.5, __, __, __

Tell whether each situation produces an *arithmetic sequence*, a *geometric sequence*, or *neither*.

17. The temperature rises at the rate of 0.75°F per hour. _____

18. A person loses 2 lb each month. _____

19. A toadstool doubles in size each week. _____

20. A person receives a 6% raise each year. _____