

Alg 2B Quiz Review: Sec 11-1 to 11-3 Fall 2017

For each sequence in 1 to 8 do the following:

- a) State if it is Arithmetic, Geometric, or Neither b) State the next three terms
c) If it's Arithmetic state the common difference and if it's Geometric state the common ratio.

1. 13, 17, 25, 37, 53, ... 2. 96, 240, 600, 1500, ... 3. 185, 178, 171, 164, ...
4. 139968, 23328, 3888, 648, ... 5. 9, 9, 27, 135, 945, ... 6. 500, 499, 495, 486, 470, ...
7. 6, -12, -48, 288, 2304, ... 8. -113, -99.5, -86, -72.5, ...
9. $\frac{84}{3}, \frac{73}{8}, \frac{62}{18}, \frac{51}{33}, \dots$ 10. 5, $\frac{11}{2}, \frac{23}{4}, \frac{47}{8}, \dots$

Use each formula to find the 8th, 9th, and 10th terms.

11. $a_1 = 44$ $a_n = (a_{n-1}) + (n+1)^2$ 12. $a_n = 10(2n+1)^2$
13. $a_1 = 4, a_2 = 5$ $a_n = (a_{n-1}) + 2(a_{n-2})$

Write a recursive formula for each sequence.

14. 12, 28, 44, 60, 76, ... 15. 30, 37, 45, 54, 64, ... 16. 6, 42, 294, 2058, 14406, ...

Write an explicit formula for each sequence.

17. 4, 6, 9, 13.5, 20.25, ... 18. $\frac{3}{4}, \frac{6}{9}, \frac{9}{16}, \frac{12}{25}, \dots$ 19. 62, 59, 56, 53, 50, ...

State the number of terms in each sequence.

20. 7, 13, 19, 25, ..., 115 21. 3, 6, 12, 24, ..., 24576

Find the missing terms in each sequence.

22. Arithmetic Sequence: a) 113, __, 165 b) 18, __, __, __, 110 c) -7, __, __, __, -52
23. Geometric Sequence: a) 17, __, 612 b) 3, __, __, __, 768 c) 9, __, __, __, -288

24. Use the given information to find the 25th term of this arithmetic sequence. $a_5 = 28$ $a_9 = 52$
25. Use the given information to find the 16 term of this geometric sequence: $a_4 = 135$ $a_7 = 3645$

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ANSWERS

1. a) Neither b) 73, 97, 125 2. a) Geometric b) 3750, 9375, 23437.5 c) $r = 2.5$
3. a) Arithmetic b) 157, 150, 143 c) $d = -7$ 4. a) Geometric b) 108, 18, 3 c) $r = \frac{1}{6}$
5. a) Neither b) 8505, 93555, 1216215 6. a) Neither b) 445, 409, 360
7. a) Neither b) -23040, -276480, 3870720
8. a) Arithmetic b) -59, -45.5, -32 c) $d = 13.5$
9. a) Neither b) $\frac{40}{53}, \frac{29}{78}, \frac{18}{108}$ 10. a) Neither b) $\frac{95}{16}, \frac{191}{32}, \frac{383}{64}$
11. $a_8 = 324, a_9 = 424, a_{10} = 545$ 12. $a_8 = 2890, a_9 = 3610, a_{10} = 4410$
13. $a_8 = 383, a_9 = 769, a_{10} = 1535$ 14. $a_1 = 12$ $a_n = a_{n-1} + 16$
15. $a_1 = 30$ $a_n = a_{n-1} + (n+5)$ 16. $a_1 = 6$ $a_n = 7(a_{n-1})$
17. $a_n = 4(1.5)^{n-1}$ 18. $a_n = \frac{3n}{(n+1)^2}$ 19. $a_n = 62 - 3(n-1)$
20. 19 terms 21. 14 terms 22. a) 139 b) 41, 64, 87 c) -16, -25, -34, -43
23. a) 102 b) $\pm 12, 48, \pm 192$ c) -18, 36, -72, 144
24. $a_{25} = 148$ 25. $a_{16} = 71744535$