Submission 25: Arithmetic and Geometric Sequences

You have looked at it once before. There are 25 questions worth 28 points.

Part 1

Select the best answer from the choices provided. (Each question is worth one point)

1. A pattern of numbers is called a(n) _____.

   - ○ term
   - ○ sequence
   - ○ arithmetic sequence
   - ○ common difference

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2. The conclusion reached by inductive reasoning is called _____.

   - ○ inductive reasoning
   - ○ common difference
   - ○ geometric sequence
   - ○ conjecture

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3. Find the 17^{th} term of the sequence in which $a_1 = -7$ and the common difference is 3.

   - ○ -7
   - ○ 41
   - ○ 27
   - ○ 44

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4. Find the 35^{th} term of the sequence in which $a_1 = 7$ and the common difference is 7.

   - ○ 245
   - ○ 77
   - ○ 252
   - ○ 217

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5. Find the 35^{th} term of the sequence in which $a_1 = 10$ and the common difference is 3.

   - ○ 62
   - ○ 115
   - ○ 80
   - ○ 112

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6. Find the 15^{th} term of the sequence in which $a_1 = -9$ and the common difference is 3.

   - ○ -15
   - ○ 36
   - ○ 33
   - ○ 21

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7. Find the 26^{th} term of the sequence in which $a_1 = -4$ and the common difference is -5.

   - ○ 51
   - ○ -129
   - ○ -160
   - ○ -134

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8. Find the formula for the 11^{th} term of the sequence in which $a_1 = 6$ and the common ratio is -3.

   - ○ $6 \cdot (-3)^{10}$
   - ○ $-3 \cdot 6^{10}$
   - ○ $6 \cdot (-3)^{11}$
   - ○ $-3 \cdot 6^{11}$

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9. Find the formula for the 14^{th} term of the sequence in which $a_1 = 2$ and the common ratio is -4.

   - ○ $-4 \cdot 2^{13}$
   - ○ $2 \cdot (-4)^{13}$
   - ○ $2 \cdot (-4)^{14}$
   - ○ $-4 \cdot 2^{14}$

Select the best answer from the choices provided. (Each question is worth one point)

10. Find the sum of the first 15 terms of the arithmetic sequence whose first term is 6 and whose 15^{th} term is 104.

- 1650
- 220
- 825
- 630

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11. Find the 26^{th} term of the following sequence:

5, 12, 19 . . .

- 54
- 187
- 180
- 161

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12. Find the 21^{st} term of the following sequence:

-10, -20, -30 . . .

- -220
- -240
- -210
- -130

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13. Find the 25^{th} term of the following sequence:

9, 18, 27 . . .

- 97
- 225
- 209
- 234

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14. Find the 23^{rd} term of the following sequence:

-7, -4, -1 . . .

- -31
- 39
- 59
- 62

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15. Find the 18^{th} term of the following sequence:

7, 4, 1 . . .

- -44
- -62
- -47
- -65

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16. Find the 13^{th} term of the following sequence:

-3, -18, -108 . . .

- $6 \cdot (-3)^{13}$
- $-3 \cdot 6^{13}$
- $6 \cdot (-3)^{12}$
- $-3 \cdot 6^{12}$

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17. Find the 10^{th} term of the following sequence:

-5, -10, -20 . . .

- $2 \cdot (-5)^{9}$
- $2 \cdot (-5)^{10}$
- $-5 \cdot 2^{9}$
- $-5 \cdot 2^{10}$

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18. Find the 19^{th} term of the following sequence:

-7, -28, -112 . . .

- $4 \cdot (-7)^{18}$
- $-7 \cdot 4^{19}$
- $-7 \cdot 4^{18}$
- $4 \cdot (-7)^{19}$

Part 3

Select the best answer from the choices provided. (Each question is worth one point)

19. Find the sum of the first 32 terms of the following sequence:

-10, -2, 6 . . .

- 456
- 2560
- 3648
- 7296

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20. Find the sum of the first 23 terms of the following sequence:

4, 14, 24 . . .

- 5244
- 2622

- 5244
- 2022
- 456
- 920

21. Find the sum of the first 33 terms of the following sequence:

8, 17, 26 . . .

- 608
- 2376
- 5016
- 10032

22. Find the sum of the first 29 terms of the following sequence:

-9, -3, 3 . . .

- 2175
- 4350
- 300
- -1566

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ype the answer to the question in the textbox below each item. (Each question is worth two points)

23. Find the 15th term of the following sequence:

-6, -13, -20 . . .

24. Find the 31st term of the following sequence:

12, 10, 8 . . .

25. Find the 33rd term of the following sequence:

4, 9, 14 . . .