

Arithmetic and Geometric Sequences Practice

Date _____ Period _____

Find the common difference, the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

1) $-15, -22, -29, -36, \dots$

Find a_{33}

2) $23, 19, 15, 11, \dots$

Find a_{38}

Given the second term and the common difference of an arithmetic sequence find the term named in the problem and the explicit formula.

3) $a_2 = 130, d = 100$

Find a_{33}

4) $a_2 = -102, d = -100$

Find a_{29}

Given a term in an arithmetic sequence and the common difference find the term named in the problem and the explicit formula.

5) $a_{19} = -74, d = -6$

Find a_{24}

6) $a_{15} = -2834, d = -200$

Find a_{22}

Given two terms in an arithmetic sequence find the common difference, the term named in the problem, and the explicit formula.

7) $a_{13} = 92$ and $a_{33} = 272$

Find a_{21}

8) $a_{18} = 3376$ and $a_{33} = 6376$

Find a_{27}

Find the common ratio, the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

9) 3, 12, 48, 192, ...

Find a_{10}

10) -4, 12, -36, 108, ...

Find a_{10}

Given the first term and the common ratio of a geometric sequence find the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

11) $a_1 = 1, r = 2$

Find a_9

12) $a_1 = -1, r = 5$

Find a_9

Given a term in a geometric sequence and the common ratio find the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

13) $a_5 = -32, r = 2$

Find a_{10}

14) $a_4 = 16, r = 2$

Find a_{10}

Given two terms in a geometric sequence find the common ratio, the term named in the problem, and the explicit formula.

15) $a_5 = 162$ and $a_2 = 6$

Find a_{12}

16) $a_5 = 243$ and $a_4 = 81$

Find a_{11}

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Date _____ Period _____

Find the common difference, the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

1) $-15, -22, -29, -36, \dots$

Find a_{33} Common Difference: $d = -7$ Next 3 terms: $-43, -50, -57$

$a_{33} = -239$

Explicit: $a_n = -8 - 7n$

2) $23, 19, 15, 11, \dots$

Find a_{38} Common Difference: $d = -4$ Next 3 terms: $7, 3, -1$

$a_{38} = -125$

Explicit: $a_n = 27 - 4n$

Given the second term and the common difference of an arithmetic sequence find the term named in the problem and the explicit formula.

3) $a_2 = 130, d = 100$

Find a_{33}

$a_{33} = 3230$

Explicit: $a_n = -70 + 100n$

4) $a_2 = -102, d = -100$

Find a_{29}

$a_{29} = -2802$

Explicit: $a_n = 98 - 100n$

Given a term in an arithmetic sequence and the common difference find the term named in the problem and the explicit formula.

5) $a_{19} = -74, d = -6$

Find a_{24}

$a_{24} = -104$

Explicit: $a_n = 40 - 6n$

6) $a_{15} = -2834, d = -200$

Find a_{22}

$a_{22} = -4234$

Explicit: $a_n = 166 - 200n$

Given two terms in an arithmetic sequence find the common difference, the term named in the problem, and the explicit formula.

7) $a_{13} = 92$ and $a_{33} = 272$

Find a_{21} Common Difference: $d = 9$

$a_{21} = 164$

Explicit: $a_n = -25 + 9n$

8) $a_{18} = 3376$ and $a_{33} = 6376$

Find a_{27} Common Difference: $d = 200$

$a_{27} = 5176$

Explicit: $a_n = -224 + 200n$

Find the common ratio, the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

9) 3, 12, 48, 192, ...

Find a_{10}

Common Ratio: $r = 4$

Next 3 terms: 768, 3072, 12288

$a_{10} = 786432$

Explicit: $a_n = 3 \cdot 4^{n-1}$

10) -4, 12, -36, 108, ...

Find a_{10}

Common Ratio: $r = -3$

Next 3 terms: -324, 972, -2916

$a_{10} = 78732$

Explicit: $a_n = -4 \cdot (-3)^{n-1}$

Given the first term and the common ratio of a geometric sequence find the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

11) $a_1 = 1, r = 2$

Find a_9

Next 3 terms: 2, 4, 8

$a_9 = 256$

Explicit: $a_n = 2^{n-1}$

12) $a_1 = -1, r = 5$

Find a_9

Next 3 terms: -5, -25, -125

$a_9 = -390625$

Explicit: $a_n = -5^{n-1}$

Given a term in a geometric sequence and the common ratio find the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

13) $a_5 = -32, r = 2$

Find a_{10}

Next 3 terms: -64, -128, -256

$a_{10} = -1024$

Explicit: $a_n = -2 \cdot 2^{n-1}$

14) $a_4 = 16, r = 2$

Find a_{10}

Next 3 terms: 32, 64, 128

$a_{10} = 1024$

Explicit: $a_n = 2 \cdot 2^{n-1}$

Given two terms in a geometric sequence find the common ratio, the term named in the problem, and the explicit formula.

15) $a_5 = 162$ and $a_2 = 6$

Find a_{12}

Common Ratio: $r = 3$

$a_{12} = 354294$

Explicit: $a_n = 2 \cdot 3^{n-1}$

16) $a_5 = 243$ and $a_4 = 81$

Find a_{11}

Common Ratio: $r = 3$

$a_{11} = 177147$

Explicit: $a_n = 3 \cdot 3^{n-1}$