

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) $-14, -12, -10, -8, \dots$

Find a_{39}

2) $-24, 76, 176, 276, \dots$

Find a_{32}

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

3) $a_2 = 11, d = -2$

Find a_{24}

4) $a_2 = 15, d = 3$

Find a_{33}

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

5) $a_{23} = -117, d = -4$

Find a_{26}

6) $a_{39} = 1110, d = 30$

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) $a_{14} = -101$ and $a_{34} = -201$

Find a_{23}

8) $a_{10} = 1768$ and $a_{38} = 7368$

Find a_{23}

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) $-2, -6, -18, -54, \dots$
Find a_{12}

10) $1, 3, 9, 27, \dots$
Find a_9

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) $a_1 = -3, r = -2$
Find a_9

12) $a_1 = -2, r = 5$
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) $a_1 = 4, r = -2$
Find a_{12}

14) $a_2 = -4, r = 2$
Find a_{11}

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

15) $a_6 = 972$ and $a_5 = 324$
Find a_{11}

16) $a_5 = 48$ and $a_6 = 96$
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) $-14, -12, -10, -8, \dots$

Find a_{39} Common Difference: $d = 2$ Next 3 terms: $-6, -4, -2$

$a_{39} = 62$

Explicit: $a_n = -16 + 2n$

2) $-24, 76, 176, 276, \dots$

Find a_{32} Common Difference: $d = 100$ Next 3 terms: $376, 476, 576$

$a_{32} = 3076$

Explicit: $a_n = -124 + 100n$

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

3) $a_2 = 11, d = -2$

Find a_{24}

$a_{24} = -33$

Explicit: $a_n = 15 - 2n$

4) $a_2 = 15, d = 3$

Find a_{33}

$a_{33} = 108$

Explicit: $a_n = 9 + 3n$

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

5) $a_{23} = -117, d = -4$

Find a_{26}

$a_{26} = -129$

Explicit: $a_n = -25 - 4n$

6) $a_{39} = 1110, d = 30$

Find a_{22}

$a_{22} = 600$

Explicit: $a_n = -60 + 30n$

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

7) $a_{14} = -101$ and $a_{34} = -201$

Find a_{23} Common Difference: $d = -5$

$a_{23} = -146$

Explicit: $a_n = -31 - 5n$

8) $a_{10} = 1768$ and $a_{38} = 7368$

Find a_{23} Common Difference: $d = 200$

$a_{23} = 4368$

Explicit: $a_n = -232 + 200n$

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) $-2, -6, -18, -54, \dots$

Find a_{12}

Common Ratio: $r = 3$

Next 3 terms: $-162, -486, -1458$

$a_{12} = -354294$

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

10) $1, 3, 9, 27, \dots$

Find a_9

Common Ratio: $r = 3$

Next 3 terms: $81, 243, 729$

$a_9 = 6561$

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

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) $a_1 = -3, r = -2$

Find a_9

Next 3 terms: $6, -12, 24$

$a_9 = -768$

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

12) $a_1 = -2, r = 5$

Find a_9

Next 3 terms: $-10, -50, -250$

$a_9 = -781250$

Explicit: $a_n = -2 \cdot 5^{n-1}$

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) $a_1 = 4, r = -2$

Find a_{12}

Next 3 terms: $-8, 16, -32$

$a_{12} = -8192$

Explicit: $a_n = 4 \cdot (-2)^{n-1}$

14) $a_2 = -4, r = 2$

Find a_{11}

Next 3 terms: $-8, -16, -32$

$a_{11} = -2048$

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) $a_6 = 972$ and $a_5 = 324$

Find a_{11}

Common Ratio: $r = 3$

$a_{11} = 236196$

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

16) $a_5 = 48$ and $a_6 = 96$

Find a_{11}

Common Ratio: $r = 2$

$a_{11} = 3072$

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