PreCalculus Name_____ ID: 1

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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) $-32,\ 168,\ 368,\ 568, \ldots$
Find a_{20}

2) $3,\ -2,\ -7,\ -12, \ldots$
Find a_{36}

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

3) $a_2 = 16,\ d = -9$
Find a_{21}

4) $a_2 = 45,\ d = 7$
Find a_{28}

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

5) $a_{24} = 38,\ d = 2$
Find a_{36}

6) $a_9 = -60,\ d = -10$
Find a_{35}

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

7) $a_{12} = -73$ and $a_{35} = -280$
Find a_{28}

8) $a_{14} = -1268$ and $a_{36} = -3468$
Find a_{30}

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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) $-4, -8, -16, -32, ...$
Find a_{11}

10) $-1, 2, -4, 8, ...$
Find a_{12}

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) $a_1 = 1,\ r = 3$
Find a_9

12) $a_1 = -4,\ r = 3$
Find a_{12}

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) $a_2 = 12,\ r = -3$
Find a_9

14) $a_5 = -64,\ r = -2$
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) $a_6 = -972$ and $a_3 = -36$
Find a_{12}

16) $a_6 = 128$ and $a_5 = 64$
Find a_{12}

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Arithmetic and Geometric Sequences Practice

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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) $-32,\ 168,\ 368,\ 568, \ldots$
Find a_{20}

Common Difference: $d = 200$
Next 3 terms: $768,\ 968,\ 1168$
$a_{20} = 3768$
Explicit: $a_n = -232 + 200n$

2) $3,\ -2,\ -7,\ -12, \ldots$
Find a_{36}

Common Difference: $d = -5$
Next 3 terms: $-17,\ -22,\ -27$
$a_{36} = -172$
Explicit: $a_n = 8 - 5n$

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

3) $a_2 = 16,\ d = -9$
Find a_{21}

$a_{21} = -155$
Explicit: $a_n = 34 - 9n$

4) $a_2 = 45,\ d = 7$
Find a_{28}

$a_{28} = 227$
Explicit: $a_n = 31 + 7n$

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

5) $a_{24} = 38,\ d = 2$
Find a_{36}

$a_{36} = 62$
Explicit: $a_n = -10 + 2n$

6) $a_9 = -60,\ d = -10$
Find a_{35}

$a_{35} = -320$
Explicit: $a_n = 30 - 10n$

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

7) $a_{12} = -73$ and $a_{35} = -280$
Find a_{28}

Common Difference: $d = -9$
$a_{28} = -217$
Explicit: $a_n = 35 - 9n$

8) $a_{14} = -1268$ and $a_{36} = -3468$
Find a_{30}

Common Difference: $d = -100$
$a_{30} = -2868$
Explicit: $a_n = 132 - 100n$

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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) $-4, -8, -16, -32, \ldots$
Find a_{11}

Common Ratio: $r = 2$
Next 3 terms: $-64, -128, -256$
$a_{11} = -4096$
Explicit: $a_n = -4 \cdot 2^{n-1}$

10) $-1, 2, -4, 8, \ldots$
Find a_{12}

Common Ratio: $r = -2$
Next 3 terms: $-16, 32, -64$
$a_{12} = 2048$
Explicit: $a_n = -(-2)^{n-1}$

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) $a_1 = 1, r = 3$
Find a_9

Next 3 terms: $3, 9, 27$
$a_9 = 6561$
Explicit: $a_n = 3^{n-1}$

12) $a_1 = -4, r = 3$
Find a_{12}

Next 3 terms: $-12, -36, -108$
$a_{12} = -708588$
Explicit: $a_n = -4 \cdot 3^{n-1}$

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) $a_2 = 12, r = -3$
Find a_9

Next 3 terms: $-36, 108, -324$
$a_9 = -26244$
Explicit: $a_n = -4 \cdot (-3)^{n-1}$

14) $a_5 = -64, r = -2$
Find a_{10}

Next 3 terms: $128, -256, 512$
$a_{10} = 2048$
Explicit: $a_n = -4 \cdot (-2)^{n-1}$

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 $a_3 = -36$
Find a_{12}

Common Ratio: $r = 3$
$a_{12} = -708588$
Explicit: $a_n = -4 \cdot 3^{n-1}$

16) $a_6 = 128$ and $a_5 = 64$
Find a_{12}

Common Ratio: $r = 2$
$a_{12} = 8192$
Explicit: $a_n = 4 \cdot 2^{n-1}$

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