Algebra 2 Name_____

Assignment

Date_____ Period____

Find the missing term or terms in each geometric sequence.

1) ..., −4, ___, −36, ...

2) ..., −4, ___, −144, ...

3) ..., 3, ___, 48, ...

4) ..., 2, ___, 50, ...

Determine if the sequence is geometric. If it is, find the common ratio, the 8th term, and the explicit formula.

5) −6, −4, −1, 3, ...

6) 8, 7, 6, 5, ...

7) 4, 16, 36, 64, ...

8) –1, 2, –4, 8, ...

Given the explicit formula for a geometric sequence find the common ratio and the 8th term.

9) $a_n = 2 \cdot 5^{n-1}$

10) $a_n = 3 \cdot 4^{n-1}$

Given the second term and the common ratio of a geometric sequence find the 8th term and the explicit formula.

11) $a_2 = 5,\ r = -5$

12) $a_2 = -16,\ r = 4$

Evaluate each geometric series described.

13) $-4 + 20 - 100 + 500...,\ n = 7$

14) $-1 - 4 - 16 - 64...,\ n = 8$

15) $1 + 6 + 36 + 216...,\ n = 8$

16) $4 + 16 + 64 + 256...,\ n = 7$

17) $\sum_{i=1}^{7} 5^{i-1}$

18) $\sum_{k=1}^{7} (-5)^{k-1}$

19) $\sum_{m=1}^{8} 3 \cdot 5^{m-1}$

20) $\sum_{n=1}^{8} 2 \cdot 3^{n-1}$

21) $a_1 = 3,\ r = -4,\ n = 10$

22) $a_1 = 2,\ r = 4,\ n = 8$

23) $a_1 = 2,\ r = -3,\ n = 10$

24) $a_1 = 2,\ r = 4,\ n = 7$

Determine the number of terms *n* in each geometric series.

25) $a_1 = -1,\ r = 6,\ S_n = -55987$

26) $a_1 = 2,\ r = 2,\ S_n = 30$

27) $a_1 = 1,\ r = 3,\ S_n = 1093$

28) $a_1 = -1,\ r = 6,\ S_n = -259$

Algebra 2 Name_____

Assignment

Date_____ Period____

Find the missing term or terms in each geometric sequence.

1) ..., –4, ___, –36, ...

–12

2) ..., –4, ___, –144, ...

–24

3) ..., 3, ___, 48, ...

12

4) ..., 2, ___, 50, ...

10

Determine if the sequence is geometric. If it is, find the common ratio, the 8th term, and the explicit formula.

5) –6, –4, –1, 3, ...

Not geometric

6) 8, 7, 6, 5, ...

Not geometric

7) 4, 16, 36, 64, ...

Not geometric

8) –1, 2, –4, 8, ...

Common Ratio: $r = -2$
$a_8 = 128$
Explicit: $a_n = -(-2)^{n-1}$

Given the explicit formula for a geometric sequence find the common ratio and the 8th term.

9) $a_n = 2 \cdot 5^{n-1}$

Common Ratio: $r = 5$
$a_8 = 156250$

10) $a_n = 3 \cdot 4^{n-1}$

Common Ratio: $r = 4$
$a_8 = 49152$

Given the second term and the common ratio of a geometric sequence find the 8th term and the explicit formula.

11) $a_2 = 5,\ r = -5$

$a_8 = 78125$
Explicit: $a_n = -(-5)^{n-1}$

12) $a_2 = -16,\ r = 4$

$a_8 = -65536$
Explicit: $a_n = -4 \cdot 4^{n-1}$

Evaluate each geometric series described.

13) $-4 + 20 - 100 + 500...,\ n = 7$

-52084

14) $-1 - 4 - 16 - 64...,\ n = 8$

-21845

15) $1 + 6 + 36 + 216...,\ n = 8$

335923

16) $4 + 16 + 64 + 256...,\ n = 7$

21844

17) $\sum_{i=1}^{7} 5^{i-1}$

19531

18) $\sum_{k=1}^{7} (-5)^{k-1}$

13021

19) $\sum_{m=1}^{8} 3 \cdot 5^{m-1}$

292968

20) $\sum_{n=1}^{8} 2 \cdot 3^{n-1}$

6560

21) $a_1 = 3,\ r = -4,\ n = 10$

–629145

22) $a_1 = 2,\ r = 4,\ n = 8$

43690

23) $a_1 = 2,\ r = -3,\ n = 10$

–29524

24) $a_1 = 2,\ r = 4,\ n = 7$

10922

Determine the number of terms *n* in each geometric series.

25) $a_1 = -1,\ r = 6,\ S_n = -55987$

7

26) $a_1 = 2,\ r = 2,\ S_n = 30$

4

27) $a_1 = 1,\ r = 3,\ S_n = 1093$

7

28) $a_1 = -1,\ r = 6,\ S_n = -259$

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