PreCalculus Unit 10 Lesson 1 Name_____ ID: 1

Sequences Assignment (Day 1)

Date_____ Period____

For each sequence, state if it is arithmetic, geometric, or neither.

1) $-18.3,\ -15.8,\ -13.3,\ -10.8,\ -8.3,\ ...$

2) $1,\ \frac{4}{5},\ \frac{2}{3},\ \frac{4}{7},\ \frac{1}{2},\ ...$

3) $-1,\ -4,\ -16,\ -64,\ -256,\ ...$

4) $-16,\ -10,\ -4,\ 2,\ 8,\ ...$

5) $3,\ 6,\ 11,\ 18,\ 27,\ ...$

6) $2,\ -6,\ 18,\ -54,\ 162,\ ...$

Find the missing term or terms in each arithmetic sequence.

7) ..., −20, ___, 380, ...

8) ..., 23, ___, 27, ...

Find the missing term or terms in each geometric sequence.

9) ..., −2, ___, −72, ...

10) ..., 1, ___, 9, ...

Determine if the sequence is arithmetic. If it is, 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.

11) $-16,\ -216,\ -416,\ -616,\ ...$

Common Difference _____

Find a_{39} _____

Recursive Formula_____

Explicit Formula _____

12) $28,\ 23,\ 18,\ 13,\ ...$

Common Difference _____

Find a_{27} _____

Recursive Formula_____

Explicit Formula _____

13) $28,\ 24,\ 20,\ 16,\ ...$

Common Difference _____

Find a_{22} _____

Recursive Formula_____

Explicit Formula _____

14) $-16,\ 184,\ 384,\ 584,\ ...$

Common Difference _____

Find a_{35} _____

Recursive Formula_____

Explicit Formula _____

Determine if the sequence is geometric. If it is, find the common ratio, the 8th term, the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

15) 1, 3, 9, 27, ...

Common Ratio _____

Recursive Formula _____

Explicit Formula _____

Next Three Terms _____,_____,_____

Find a_8 Find a_9

16) −2, 6, −18, 54, ...

Common Ratio _____

Recursive Formula _____

Explicit Formula _____

Next Three Terms _____,_____,_____

Find a_8 Find a_{11}

17) −4, 8, −16, 32, ...

Common Ratio _____

Recursive Formula _____

Explicit Formula _____

Next Three Terms _____,_____,_____

Find a_8 Find a_{12}

18) −4, −12, −36, −108, ...

Common Ratio _____

Recursive Formula _____

Explicit Formula _____

Next Three Terms _____,_____,_____

Find a_8 Find a_{12}

Determine whether each sequence is arithmetic or geometric and write the explicit formula for each sequence.

19) 1, 6, 36, 216, 1296, ...

20) 23, 28, 33, 38, 43, ...

21) 11, 31, 51, 71, 91, ...

22) 4, 24, 144, 864, 5184, ...

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Sequences Assignment (Day 1)

Date_____ Period____

For each sequence, state if it is arithmetic, geometric, or neither.

1) $-18.3,\ -15.8,\ -13.3,\ -10.8,\ -8.3,\ \ldots$

Arithmetic

2) $1,\ \frac{4}{5},\ \frac{2}{3},\ \frac{4}{7},\ \frac{1}{2},\ \ldots$

Neither

3) $-1,\ -4,\ -16,\ -64,\ -256,\ \ldots$

Geometric

4) $-16,\ -10,\ -4,\ 2,\ 8,\ \ldots$

Arithmetic

5) $3,\ 6,\ 11,\ 18,\ 27,\ \ldots$

Neither

6) $2,\ -6,\ 18,\ -54,\ 162,\ \ldots$

Geometric

Find the missing term or terms in each arithmetic sequence.

7) ..., −20, ___, 380, ...

180

8) ..., 23, ___, 27, ...

25

Find the missing term or terms in each geometric sequence.

9) ..., −2, ___, −72, ...

−12

10) ..., 1, ___, 9, ...

3

Determine if the sequence is arithmetic. If it is, 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.

11) $-16,\ -216,\ -416,\ -616,\ \ldots$

Common Difference: $d = -200$
Next 3 terms: $-816,\ -1016,\ -1216$
$a_{39} = -7616$
Explicit: $a_n = -16 + (n-1) \cdot -200$

Common Difference _____

Find a_{39} _____

Recursive Formula_____

Explicit Formula _____

12) $28,\ 23,\ 18,\ 13,\ \ldots$

Common Difference _____

Find a_{27} _____

Recursive Formula_____

Explicit Formula _____

Common Diffe
Next 3 terms: 8
$a_{27} = -102$
Explicit: $a_n = 2$

13) $28,\ 24,\ 20,\ 16,\ \ldots$

Common Difference: $d = -4$
Next 3 terms: $12,\ 8,\ 4$
$a_{22} = -56$
Explicit: $a_n = 28 + (n-1) \cdot -4$

Common Difference _____

Find a_{22} _____

Recursive Formula_____

Explicit Formula _____

14) $-16,\ 184,\ 384,\ 584,\ \ldots$

Common Difference _____

Find a_{35} _____

Recursive Formula_____

Explicit Formula _____

Common Diffe
Next 3 terms: 7
$a_{35} = 6784$
Explicit: $a_n = -$

Determine if the sequence is geometric. If it is, find the common ratio, the 8th term, the term named in the problem, the explicit formula, and the three terms in the sequence after the last one given.

15) 1, 3, 9, 27, ...

Common Ratio _____

Recursive Formula _____

Explicit Formula _____

Next Three Terms _____,_____,_____

Find a_8 Find a_9

Common Ratio: $r = 3$
Next 3 terms: 81, 243, 729
$a_8 = 2187$
$a_9 = 6561$
Explicit: $a_n = 3^{n-1}$

16) –2, 6, –18, 54, ...

Common Ratio _____

Recursive Formula _____

Explicit Formula _____

Next Three Terms _____,_____,_____

Find a_8 Find a_{11}

Common Rat
Next 3 terms:
$a_8 = 4374$
$a_{11} = -11809$
Explicit: $a_n =$

17) –4, 8, –16, 32, ...

Common Ratio _____

Recursive Formula _____

Explicit Formula _____

Next Three Terms _____,_____,_____

Find a_8 Find a_{12}

Common Ratio: $r = -2$
Next 3 terms: –64, 128, –256
$a_8 = 512$
$a_{12} = 8192$
Explicit: $a_n = -4 \cdot (-2)^{n-1}$

18) –4, –12, –36, –108, ...

Common Ratio _____

Recursive Formula _____

Explicit Formula _____

Next Three Terms _____,_____,_____

Find a_8 Find a_{12}

Common Rat
Next 3 terms:
$a_8 = -8748$
$a_{12} = -70858$
Explicit: $a_n =$

Determine whether each sequence is arithmetic or geometric and write the explicit formula for each sequence.

19) 1, 6, 36, 216, 1296, ...

$a_n = 6^{n-1}$

20) 23, 28, 33, 38, 43, ...

$a_n = 18 + 5n$

21) 11, 31, 51, 71, 91, ...

$a_n = -9 + 20n$

22) 4, 24, 144, 864, 5184, ...

$a_n = 4 \cdot 6^{n-1}$