Algebra 2 Name_____

12.23 Classwork

For each sequence, state if it is arithmetic or geometric

1) 4, 20, 100, 500, 2500, ...

2) –36, 164, 364, 564, 764, ...

3) $-\frac{3}{5}, \frac{11}{15}, \frac{31}{15}, \frac{17}{5}, \frac{71}{15}, \ldots$

4) 4, –8, 16, –32, 64, ...

Write the formula for the nth term. (You'll need to determine if the sequence is arithmetic or geometric). Then find the given term.

5) –36, –30, –24, –18, ...
Find a_{31}

6) –4, –12, –36, –108, ...
Find a_{10}

7) –22, –29, –36, –43, ...
Find a_{33}

8) –2, 4, –8, 16, ...
Find a_{9}

Find the sum of the first n terms of the series (You'll need to determine if the sequence is arithmetic or geometric).

9) $-1 + 3 - 9 + 27..., \ n = 6$

10) $8 + 14 + 20 + 26..., \ n = 14$

11) $-2 - 8 - 32 - 128..., \ n = 8$

12) $8 + 15 + 22 + 29..., \ n = 7$

Evaluate each series described.

13) $\sum_{k=3}^{7} (9k - 8)$

14) $\sum_{n=1}^{7} 4^{n-1}$

Algebra 2 Name_____

12.23 Classwork

For each sequence, state if it is arithmetic or geometric

1) 4, 20, 100, 500, 2500, ...

Geometric

2) –36, 164, 364, 564, 764, ...

Arithmetic

3) $-\frac{3}{5}, \frac{11}{15}, \frac{31}{15}, \frac{17}{5}, \frac{71}{15}, \ldots$

Arithmetic

4) 4, –8, 16, –32, 64, ...

Geometric

Write the formula for the nth term. (You'll need to determine if the sequence is arithmetic or geometric). Then find the given term.

5) –36, –30, –24, –18, ...

Find a_{31}

$a_{31} = 144$

Explicit: $a_n = -42 + 6n$

6) –4, –12, –36, –108, ...

Find a_{10}

$a_{10} = -78732$

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

7) –22, –29, –36, –43, ...

Find a_{33}

$a_{33} = -246$

Explicit: $a_n = -15 - 7n$

8) –2, 4, –8, 16, ...

Find a_9

$a_9 = -512$

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

Find the sum of the first n terms of the series (You'll need to determine if the sequence is arithmetic or geometric).

9) $-1 + 3 - 9 + 27..., \ n = 6$

182

10) $8 + 14 + 20 + 26..., \ n = 14$

658

11) $-2 - 8 - 32 - 128..., \ n = 8$

–43690

12) $8 + 15 + 22 + 29..., \ n = 7$

203

Evaluate each series described.

13) $\sum_{k=3}^{7} (9k - 8)$

185

14) $\sum_{n=1}^{7} 4^{n-1}$

5461