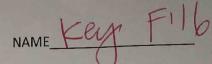
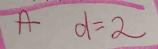
## AFM HW 4 – GEOMETRIC SEQUENCES



Determine whether each sequence is arithmetic, geometric, or neither. If it is arithmetic then state the common difference, if it is geometric then state the common ratio.

1. 5, 7, 9, 11, 13 ...



4. 8, 6.5, 5, 3.5, 2 ...

A d=-1.5

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

neither

2. 3, 9, 27, 81 ...

6 r=3

5. 15, 17, 20, 22, 24 ...

neither

8. 5, -25, 125, -625 ...

6 r=-5

3. 7, 49, 343 ...

6 r=7

6.  $-9, -2, 5, 12, 19 \dots$ 

A d=7

9. 1, 16, 81, 256, 625 ...

neither

Solve each of the following geometric sequences.

10. In a geometric sequence, the first term is 2 and the common ratio is -3. State the next three terms.

2, [-6, 18, -54]

11. Find the common ratio and the next two terms for the geometric sequence 25, -5, 1, ...

r=-1/5

-1/5

1/25

12. Find the  $12^{th}$  term of the geometric sequence -2, 4, -8, ...

 $a_{12} = -2(-2)^{12-1}$ 

a12=4096

13. In a geometric progression, the first term is 125 and the common ratio is  $\frac{2}{5}$ . Find the 8<sup>th</sup> term.

ag= 125(3/5)8-

ag= 128 625

14. Write the first 4 terms of the geometric sequence whose 5<sup>th</sup> term is 6 and whose common ratio is  $-\frac{1}{3}$ .

 $a_5 = a_1(-1/3)^{5-1}$   $b = a_1(-1/3)^4$   $b = a_1(1/81)$   $a_1 = 486$ 

486, -162, 54, -18

