AFM HW 4 – GEOMETRIC SEQUENCES NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*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. $5, 7, 9, 11, 13…$ 2. $3, 9, 27, 81…$ 3. $7, 49, 343…$

4. $8, 6.5, 5, 3.5, 2…$ 5. $15, 17, 20, 22, 24…$ 6. $-9, -2, 5, 12, 19…$

7. $\frac{1}{2} , \frac{1}{3} , \frac{1}{4} , \frac{1}{5} , …$ 8. $5, -25, 125, -625…$ 9. $1, 16, 81, 256, 625…$

*Solve each of the following geometric sequences.*

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

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

12. Find the 12th term of the geometric sequence $-2, 4, -8, …$

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

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

15. Find the first term in a geometric progression whose common ratio is 2 and whose 6th term is 96.

16. The 3rd term of a geometric progression is 54 and the 6th term is $-2$. What are the first two terms?

17. The 3rd term of a geometric progression is 12 and the 5th term is 48. Find the first two terms.

18. Which term is $\frac{1}{64}$ in the geometric progression 64, 32, 16, … ?

19. Which term is $\frac{1}{625} $in the geometric progression 3125, 625, 125, … ?