

Name: \_\_\_\_\_

Key

Period: \_\_\_\_\_

- Find the next three terms in each sequence.
- Determine if each sequence is arithmetic, geometric or neither.
- If the sequence is arithmetic or geometric, write a formula.

a. 2, 4, 8, 16, ... 32, 64, 128      geometric       $a_n = 1(2)^n$   
 $\checkmark \checkmark \checkmark \checkmark$   
 $\times 2 \times 2 \times 2 \times 2$

b. 2, 4, 6, 8, ... 10, 12, 14      arithmetic       $a_n = 0 + 2n$   
 $\checkmark \checkmark \checkmark \checkmark$   
 $+ 2 + 2 + 2 + 2$

c. 3, 7, 11, 15, ... 19, 23, 27      arithmetic       $a_n = -1 + 4n$

d. 3, 9, 27, 81, ... 243, 729, 2187      geometric       $a_n = 1(3)^n$

e. 5, -2, -9, -16, ... -23, -30, -37      arithmetic       $a_n = 12 - 7n$

f. 4, 6, 9, 13, 18, ... 24, 31, 39      neither  
 $\checkmark \checkmark \checkmark \checkmark$   
 $+ 2 + 3 + 4 + 5$   
 $\checkmark \checkmark \checkmark$   
 $+ 1 + 1 + 1$

Quadratic... 2<sup>nd</sup> difference is the same #, in this case, 1.

g. 2, 3, 6, 11, 18, ... 27, 38, 50      neither  
 $\checkmark \checkmark \checkmark \checkmark$   
 $+ 1 + 3 + 5 + 7$   
 $\checkmark \checkmark \checkmark \checkmark$   
 $+ 2 + 2 + 2 + 2$

Quadratic... 2<sup>nd</sup> difference is the same #, in this case, 2.