Unit 5 Check for Understanding #1 Name: _____ Date: _____ Per: _____

Before you begin, read the rubrics. If you have read the rubrics, please put a star in the box next to your name.

F-LE 1	Mastery (4)	Proficient (3)	Nearly Proficient (2)	Needs Improvement (1)
Determine whether a situation is linear or exponential	Student correctly identifies both linear and exponential relationships from tables. Student determines whether a situation represents a linear or exponential relationship and justifies the relationship using mathematics.	Student correctly identifies both linear and exponential relationships from tables and justifies the relationships using mathematics.	Student correctly identifies the relationships as either linear or exponential but is not always able to justify mathematically.	Student shows little understanding or no work is shown.

1. Determine whether each table has a linear or exponential relationship. Justify how you decided either in words or using mathematics.

a.

n	t(n)
0	1
1	3
2	5
3	7

Rule: _____

b. T(n) notation

n	t(n)
2	9
4	17
6	25
8	33

Rule: _____

c.

n	t(n)
0	3
1	6
2	12
3	24

Rule: _____

2. Digger the Dog saves the same number of bones each week. What type of relationship does the total number of saved bones represent? Explain your thinking.

Recursive $T(n) = T(n-1) + 2$

Explicit $T(n) = 3 + 2(n-1)$

$T(n) = T(n-1) + 4$

$T(n) = 5 + 4(n-1)$

$T(n) = T(n-1)(2)$

$T(n) = (6)(2)^{n-1}$

F-BF 2	Mastery (4)	Proficient (3)	Nearly Proficient (2)	Needs Improvement (1)
Determine whether a sequence is arithmetic or geometric	Student correctly describes the growth pattern, determines multiple terms of the sequence, and mathematically justifies the sequence as arithmetic and/or geometric. Student uses complete sentences.	Student correctly describes the growth pattern, determines the third through fifth terms of the sequence, and mathematically justifies the sequence as arithmetic and/or geometric.	Student minimally describes the growth pattern and identifies the sequence as arithmetic and/or geometric.	Student shows little understanding or no work is shown.

3. Maggie was doing her homework when her dog bit off a piece of the paper. All she had left was the start of the sequence: 4, 12, and the fact that 972 was some term of the sequence.

a. Could the sequence be arithmetic? Why or why not?

$T(n) = 4 + 8(n-1)$

$972 = 4 + 8(n-1)$

$-4 \quad -4$

$968 = 8(n-1)$

$\div 8 \quad \div 8$

$121 = n-1$

$+1 \quad +1$

$122 = n$

Because n is a whole #, 972 is a term value its the 122nd term.

b. Could the sequence be geometric? Why or why not?

3 12 36 108 324 972

972 is the 6th term