Name: Selected Answers

Period: A3 & B7

HW 6-2

Secondary Math 3

Find the next 3 terms in the patterns and fill out all other information.

1.

Term	0	1	2	3	4	5	6
Value	2	4	8	16	32	64	128

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Initial Value: 2

Common Factor: 2

Recursive: $f(0)=2,\ f(n)=2\cdot f(n-1)$

Explicit: $f(n)=2(2)^n$

What is the value at term 8? 512

2.

Term	0	1	2	3			
Value	5	25	125	625			

Initial Value: _____

Common Factor: _____

Recursive: _____

Explicit: _____

What is the value at term 10? _____

3.

Term	-3	-2	-1	0	1	2	3
Value	4	16	64	256	1024	4096	16384

Initial Value: 256

Common Factor: 4

Recursive: $f(0)=256,\ f(n)=4\cdot f(n-1)$

Explicit: $f(n)=256(4)^n$

What is the value at term 8? 16,777,216

4.

Term	1	2	3	4			
Value	128	64	32	16			

Initial Value: _____

Common Factor: _____

Recursive: _____

Explicit: _____

What is the value at term 0? _____

5.

x	-1	0	1	2	3	4	5
y	243	81	27	9	3	1	1/3

Initial Value: 81

Common Factor: 1/3

Recursive: $f(0)=81,\ f(n)=\frac{1}{3}\cdot f(n-1)$

Explicit: $f(n)=81\cdot(\frac{1}{3})^n$

What is the value at term 7? 1/27

Use calculator, then press [Math] → [1:Frac ▶] → [Enter] to write as a fraction

explicit: $f(n) = a(r)^n$

a = 0th term

r = common ratio / common factor

Determine the 15th term in each sequence

6. $\frac{1}{5}, 1, 5, 25, \ldots$

$a = 1/25$ $\quad f(n) = \frac{1}{25}(5)^n$

$r = 5$

$f(15) = \frac{1}{25}(5)^{15}$

$= \boxed{1,220,703,125}$

7. 9, 27, 81, …

Determine how many terms there are in the following sequences

8. 4374, 1458, 486,.., 18

$a = 13,122$

$r = 1/3$

$\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$

$f(n) = 13,122(1/3)^n$

$r = \frac{1458}{4374} = \frac{1}{3}$

$\frac{13,122}{13,122}(1/3)^n = \frac{18}{13,122}$

$(1/3)^n = \frac{1}{729}$ $\quad 3^n = 729 = 3^6$

$\boxed{n = 6}$

9. 1, 4, 16,…, 4096

10. During the fall of 2012 there was an outbreak of a new strand of flu in the United States. In the first week there were 27 cases, second week 81 cases, and third week 243.

a. Write an explicit equation to represent the growth of this flu strand.

b. How many cases of the flu will be present after 6 weeks?