Page 10

Find the function/explicit rule from the table given below.

x	0	1	2	3	4	5
y	1	2	4	8	16	32

$f(x) = (1)(2^x)$

Find the recursive rule from the table given below.

x	0	1	2	3	4	5
y	1	2	4	8	16	32

$a_0 = 1$ $a_n = 2a_{n-1}$

next previous

Find the function/explicit rule from the table given below.

x	0	1	2	3	4
f(x)	9	18	36	72	144

$f(x) = 9(2)^x$

Find the recursive rule from the table given below.

n	0	1	2	3	4
a_n	9	18	36	72	144

$a_0 = 9$ $a_n = 2a_{n-1}$

Find the function/explicit rule from the table given below.

x	0	1	2	3	4
f(x)	60	30	15	7.5	3.75

$f(x) = 60\left(\frac{1}{2}\right)^x$

$f(x) = 60(.5)^x$

Find the recursive rule from the table given below.

n	0	1	2	3	4
a_n	60	30	15	7.5	3.75

$a_0 = 60 \quad a_n = \frac{1}{2}a_{n-1}$

common ratio

Find the function/explicit rule from the table given below.

x	0	1	2	3	4
f(x)	20	10	5	2.5	1.25

$f(x) = 10\left(\frac{1}{2}\right)^{x-1}$ $\quad$ $f(x) = 20\left(\frac{1}{2}\right)^x$

Find the ~~function/explicit~~ recursive rule from the table given below.

n	1	2	3	4
a_n	10	5	2.5	1.25

$a_1 = 10 \quad a_{n+1} = \frac{1}{2}a_n$ $\quad$ $a_0 = 20 \quad a_n = \frac{1}{2}a_{n-1}$

Page 13

Geometric Sequences: Finding explicit and recursive rules starting **with n = 1**

Identify the common ratio. Write a recursive function and an explicit function for each sequence.

1. 2, 10, 50, 250, 1250, 6250, ___, ___ Common Ratio: 5

1 | 2 | 3 | 4 | 5

31250, 156250

Recursive Function: $a_{n+1} = 5a_n$, $a_1 = 2$ Explicit Function $f(x) = 2(5)^{x-1}$

2. 999, 333, 111, 37, $\frac{111}{3}$, $\frac{111}{9}$, $\frac{111}{27}$, $\frac{111}{81}$ Common Ratio: $\frac{1}{3}$

Recursive Function: $a_1 = 999$ $a_{n+1} = \frac{1}{3}a_n$ Explicit Function $f(x) = 999\left(\frac{1}{3}\right)^{x-1}$

Find the missing terms for each geometric sequence and state the common ratio

1. 1, 4, __, 64, __

Common ratio_____

Recursive Function:_____

Explicit Function_____

2. $\frac{4}{3}$, ___, 12, 36, ____

Common ratio_____

Recursive Function:_____

Explicit Function_____