Geometric Meanies

Multiply (handwritten)

A Practice Understanding Task

Each of the tables below represents a geometric sequence. Find the missing terms in the sequence, showing your method.
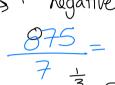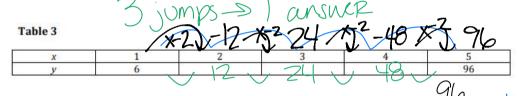
$$\frac{12}{3} = 4^{\frac{1}{2}} = 2 \qquad r=2$$

Table 1

x	1	2	3
y	3	6	12

(handwritten: ×2, ×2, −6, x−2, x−2, 2 jumps)

Is the missing term that you identified the only answer? Why or why not?

(handwritten: move 2 times → even # jumps → you will have 2 ratios → positive & negative)

Table 2

x	1	2	3	4
y	7	35	75	875

(handwritten: ×5, ×5, ×5)

$$\frac{875}{7} = 125^{\frac{1}{3}} = 5$$

Are the missing terms that you identified the only answers? Why or why not?

(handwritten: 3 jumps → 1 answer)

Table 3

x	1	2	3	4	5
y	6	12	24	48	96

(handwritten: ×2, −12, ×2, 24, ×2, −48, ×2, 96)

$$\frac{96}{6} = 16^{\frac{1}{4}} = 2 = r$$

Are the missing terms that you identified the only answers? Why or why not?

(handwritten: 4 jumps, jumped even ratio → 2 OR −2)

Table 4

x	1	2	3	4	5	6
y	4	12	36	108	324	972

(handwritten: x−3, −12, x−3, 36, x−3, 108, x−3, 324, x−3, 972)

$$\frac{972}{4} = 243^{\frac{1}{5}} = 3 = r$$

Are the missing terms that you identified the only answers? Why or why not?

(handwritten: odd jumps → only 1 ratio, 5 jumps)

A. Describe your method for finding the geometric means.

$$\frac{1}{\# jumps}$$

Guessed $\rightarrow$
check
Calculator
    guessing

$$\frac{last\ term}{1st\ term}$$

$\downarrow$

works All the
time

B. How can you tell if there will be more than one solution for the geometric means?

odd jumps $\rightarrow$ 1 ratio

even jumps $\rightarrow$ 2 ratio $\rightarrow$ 1 negative
                              1 positive

Explicit

$$A_n = 0 + 1(n-1)$$

$$0 + 1n - 1$$

$$\boxed{1n - 1}$$

Work on homework

Work on reference sheet

If you want music, one ear bud and leave it

Hw 2nd Column, 4th box down

x	1	2	3	4
y	10	30	90	270

✱ Change 3rd & 4th terms