Geometric Meanies

A Practice Understanding Task

Each of the tables below represents a geometric sequence. Find the missing terms in the sequence, showing your method.

$$\frac{12}{3} = 4^{\frac{1}{2}} = 2$$

Table 1

x	1	2	3
y	3	6	12

(handwritten: ×6, ×6, 2 jumps)

$r = 2$

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

Even jumps— ratio can be positive and negative

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

Table 2

x	1	2	3	4
y	7	35	175	875

$r = 5$

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

3 jumps → only one ratio

Table 3

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

(handwritten: ×12, ×48)

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

$r = 2$

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

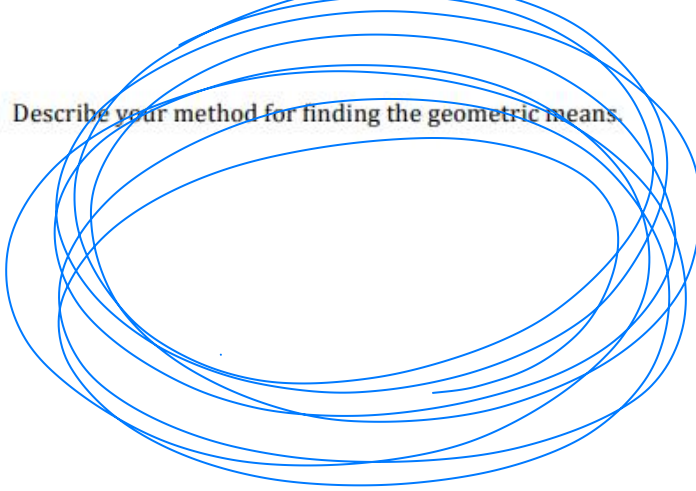4 jumps → Ratio can be 2 OR -2

Table 4

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

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

5 jumps → 3 only option
odd #

$$\frac{972}{4} =$$

$$243^{\frac{1}{5}} = 3$$

A. Describe your method for finding the geometric means.

$$\frac{\text{last term}}{\text{1}^{\text{st}}\text{ term}}^{\frac{1}{\#\text{jumps}}} = r$$

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

even jumps → + & neg

odd jumps → only 1 answer