$a_n = a_i \cdot r^{n-1}$

Ly always multiplying so if # · Practice Problems

- Geometric Seuvence

Find the first five terms of the geometric sequence with $a_1 = -3$ and common ratio (r)

-3, -15, -75, -375, -1875

Find the first five terms of the geometric sequence desribed.

ex. 1: $a_1 = 2$, r = -3

2, -6, 18, -54, 162

ex. 2: $\alpha_1 = 243$, r = 1/3

243, 81, 27, 9, 3

*to find r: and term by 1st term dunde

Examples

Find the next two terms in the sequence -64, -16, -4 ...

- -64, -16, -4, ___, ___

-16/-64 = 1/4

So we multiply by 1/4 to find the next two terms.

· -64, -16, -4, -1, -1/4

Practice

ext two terms in each geometric

- Geometric Sequence

Find the common ratio of the sequence 2, -4, 8, -16, 32, ...

To find the common ratio, divide any term by the previous term.

 $\cdot 8 \div -4 = -2$: $-16 \div 8 = -2$: $32 \div -16 = -2$, etc.

Examples

Find the 10th term of the geometric sequence with

a₁ = 2000 and a common ratio of 1/2.

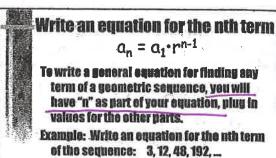
• $a_{10} = 2000 \cdot (1/2)^9 =$

 $\cdot 2000 \cdot \frac{1}{512} =$

· 2000/₅₁₂ = 125/₃₂

Examples $a_n = a_1 \cdot r^{n-1}$ Hand the indicated term of each geometric sequence:

ex. 5: $a_1 = 1/3, r = 3, n = 8$ ex. 6: $a_1 = 16, 807, r = 3/7, n = 6$ $a_1 = 16, 807, r = 3/7, n = 6$ $a_2 = 16, 807, r = 3/7, n = 6$ $a_3 = 16, 807, r = 3/7, n = 6$ $a_4 = 16, 807, r = 3/7, n = 6$ $a_6 = 16, 807, r = 3/7, n = 6$



an= 3.4n-1

Practice Problems $a_n = a_1 \cdot r^{n-1}$

- Write an equation for the nth term of each geometric sequence:
- ex. 7: 36, 12, 4, _

an = 36(1/3)n-1

• ex. 8: -2, 10, -50, ...

 $\alpha_n = -2(-5)^{n-1}$

Geometric Means

- · -5, ___, __, 625
- 625 is a₄, -5 is a₁.
- $625 = -5 \cdot r^{4-1}$ divide by -5
- -125 = r³ take the cube root of both sides___
- -5 = r

† (

Geometric Means

- Now we just need to multiply by -5 to find the means.
- -5 -5 = 25
- · -5, 25, ___, 625
- $\cdot 25 \cdot -5 = -125$
- ·-5, 25, -125, 625

Examples • Find the geometric means in each sequence: Ex. 9: 9, $\frac{8}{36}$, $\frac{36}{10}$, $\frac{10}{144}$ Ex. 10: 32, $\frac{16}{32}$, $\frac{8}{32}$, $\frac{9}{32}$, $\frac{3}{32}$ $32 = \frac{3}{32}$ $5\sqrt{\frac{1}{32}}$