

Answer on Question #48562 – Math – Algebra:

What is the next term in the geometric sequence $16, -4, 1, -\frac{1}{4}, \dots$?

Solution.

Hence, we have that:

$$a_n = 16, a_{n+1} = -4, a_{n+3} = -\frac{1}{4};$$

We need to find a_{n+4} . If $\{a_m\}$ is a geometric sequence and r is its common ratio, then

$$a_{n+1} = a_n \cdot r;$$

So we can find r in the following way:

$$r = \frac{a_{n+1}}{a_n} = \frac{-4}{16} = -\frac{1}{4};$$

Now find a_{n+4} :

$$a_{n+4} = a_{n+3} \cdot r = \left(-\frac{1}{4}\right) \cdot \left(-\frac{1}{4}\right) = \frac{1}{16}.$$