

## Answer on Question #77136 – Math – Algebra

### Question

Which term of the sequence; 256, -64, 16, -4.....is equal to 1/4096?

### Solution

Each term could be calculated as

$B_n = B_1q^{n-1}$ , where B – initial term, and q – common ratio;

$$q^{n-1} = \frac{B_n}{B_1} = \frac{1}{4096 \times 256} = \frac{1}{1048576}$$

$$q^1 = \frac{B_2}{B_1} = \frac{-64}{256} = -\frac{1}{4}$$

$$n-1 = \log_{-\frac{1}{4}} \frac{1}{1048576}$$

$$n-1 = 10$$

$$n = 11$$

**Answer:**

1/4096 is the 11<sup>th</sup> term of the sequence.