

Question #53930, Math / Calculus

Find an explicit rule for the n th term of a geometric sequence where the second and fifth terms are 36 and 2304, respectively.

Answer.

$$a_2 = a_1 r = 36$$

$$a_5 = a_1 r^4 = 2304$$

$$\text{So } \frac{a_1 r^4}{a_1 r} = \frac{2304}{36} \rightarrow r^3 = 64 \rightarrow r = 4;$$

$$a_1 = \frac{36}{r} = \frac{36}{4} = 9.$$

$$\text{Thus } a_n = 9 * 4^{n-1}.$$