Question #77137, Math / Calculus

Given is a term and the common ratio of a geometric sequence, find the first four terms and the explicit formula

t5 = -16/27, r = 2/3

Solution

$$t_4 = \frac{-\frac{16}{27}}{\frac{2}{3}} = -\frac{8}{9}$$

$$t_3 = \frac{-\frac{8}{9}}{\frac{2}{3}} = -\frac{4}{3}$$

$$t_2 = \frac{-\frac{4}{3}}{\frac{2}{3}} = -2$$

$$t_1 = \frac{-2}{\frac{2}{3}} = -3$$

$$t_n = -3\left(\frac{2}{3}\right)^{n-1}.$$

Answer:

$-3, -2, -\frac{4}{3}, -\frac{8}{9}$

Tn=$-3\left(\frac{2}{3}\right)^{n-1}$