

Geometric Sequences Sum

$$S_n = \frac{u_1 (1-r^n)}{1-r}$$

* used when the sequence is geometric *

of terms

rule/ratio

examples

1. 3, 12, 48 ... find S_6

\uparrow \uparrow
 $u_1=3$ $n=6$

What's the rule? $r=4$

$$S_6 = \frac{3(1-4^6)}{1-4} = 4095$$

2. $\sum_{n=1}^{10} 2(1.4)^{n-1}$

\uparrow \uparrow $n=10$
 u_1 r

$$S_{10} = \frac{2(1-1.4^{10})}{1-1.4}$$

$$S_{10} = 139.627$$