Name: __Selected Answers__

Finite Geometric Series

Find the sum of the finite geometric series.

3. $-3 + 6 - 12 + 24 - 48 + 96 - 192 + 384$

4. $6 - 4 + \dfrac{8}{3} - \dfrac{16}{9} + \dfrac{32}{27}$

$4.77 = \dfrac{730}{153}$ ← Typo

or $4.074 = \dfrac{110}{27}$

Determine how many terms in the geometric sequence and then find the sum

5. $-4 - 12 - 36 - \ldots - 108$

1	2	3	4
-4	-12	-36	-108

$\times 3 \quad \times 3 \quad \times 3$

$\boxed{4 \text{ terms}}$ Sum = $\boxed{-160}$

6. $2 + 4 + 8 + 16, \ldots + 128$

7. $-3 + 9 - 27 + \ldots - 243$

Write the finite geometric series from its given description, and then find its sum.

9. A geometric series that starts with 2, ends with -6250, and has a common ratio of -5

start ↙ ... Stop ↗

0	1	2	3	4	5
2	-10	50	-250	1250	-6250

$\times -5$

$\displaystyle\sum_{k=0}^{5} 2 \cdot (-5)^k$

10. A geometric series with 5 terms that begins with 1 and has a common ratio of $\frac{1}{3}$.

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11. $\displaystyle\sum_{k=3}^{6} k+6$

12. $\displaystyle\sum_{k=5}^{10} 4k-3$

$(4(5)-3) + (4(6)-3) + (4(7)-3) + (4(8)-3) + (4(9)-3) + (4(10)-3)$

$17 \quad + \quad 21 \quad + \quad 25 \quad + \quad 29 \quad + \quad 33 \quad + \quad 37 \quad = \quad \boxed{162}$

13. $\displaystyle\sum_{k=1}^{4} k^2+1$

18. Match each finite geometric series on the left with its sum on the right.

A. $2 + 6 + 18 + \cdots + 1458$ _____   1094

B. $2 - 6 + 18 - \cdots + 1458$ _____ -2186

C. $-2 + 6 - 18 + \cdots - 1458$ _____   2186

D. $-2 - 6 - \underset{-18-}{8} - \cdots - 1458$ _____ -1094

(part D's series should read -2-6-18-…..-1458)