Secondary III 8-2 HW
Finite Geometric Series

Name: Selected Answers

Find the sum of the finite geometric series.

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

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

Math → 1:Frac → Enter

$\frac{110}{27}$

Determine how many terms the geometric series has, and then find the sum of the series.

5. $-12-4-\frac{4}{3}-\cdots-\frac{4}{243}$

1	2	3	4	5	6	7
-12	-4	$-4/3$	$-4/9$	$-4/27$	$-4/81$	$-4/243$

7 terms

$-\frac{4372}{243}$

6. $0.3+0.03+0.003+\cdots+0.000003$

8. $-3+9-27+\cdots-177{,}147$

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

$\sum_{k=0}^{5} 2(-5)^k$ or $\sum_{k=1}^{6} -2/5(-5)^k$

sum: $-5{,}208$

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

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

12. $\sum_{k=5}^{10} 4k-3 = (4(5)-3)+(4(6)-3)+(4(7)-3)+(4(8)-3)+(4(9)-3)+(4(10)-3)$

$17 + 21 + 25 + 29 + 33 + 37 = 162$

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

13. Chess The first international chess tournament was held in London in 1851. This single-elimination tournament (in which paired competitors played matches and only the winner of a match continued to the next round) began with 16 competitors. How many matches were played? (total)

Hint:

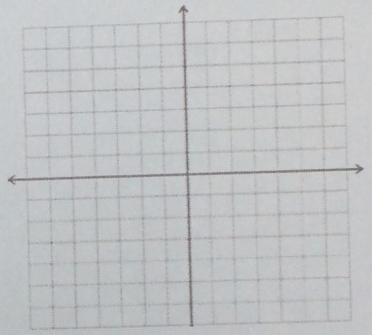
Rounds	# of matches
0	16 ← players
1	8

Add up!

Review

Find any holes, asymptotes, and intercepts and state the end behavior. Then sketch a graph.

1. $f(x)=\dfrac{x}{(x+1)(x-1)}$



2. $h(x)=\dfrac{4(x+3)}{(x+3)(x-2)}$